

Tumble Dryer

OPL Electronic Control

Refer to Page 7 for Model Identification

Original Instructions

Keep These Instructions for Future Reference.


(If this machine changes ownership, this manual must accompany machine.)



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Front Matter

	WARNING
<p>Machine installations must comply with minimum specifications and requirements stated in the applicable Installation Manual, any applicable municipal building codes, water supply requirements, electrical wiring regulations and any other relevant statutory regulations. Due to varied requirements and applicable local codes, this machine must be installed, adjusted, and serviced by qualified maintenance personnel familiar with applicable local codes and the construction and operation of this type of machinery. They must also be familiar with the potential hazards involved. Failure to observe this warning may result in personal injury, property damage, and/or equipment damage, and will void the warranty.</p> <p style="text-align: right;">W820</p>	

NOTE: The **WARNINGS** and **IMPORTANT SAFETY INSTRUCTIONS** appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution, and care must be exercised when installing, maintaining, or operating the machine.

Any problems or conditions not understood should be reported to the dealer, distributor, service agent or the manufacturer.

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Introduction

Model Identification

Information in this manual is applicable to these tumble dryer models:

	Gas			Steam/Thermal Oil		Electric	
25 Pound	CHD25G2-CA025L	DR25G2-BT025N	SA025L	CHD25S2-CT025S	IPD25S2	CHD25E2-CT025E	HU025E
			SA025N		IT025S		HU025F
	CHD25G2-CA025N	DR25G2-BT025R	SK025N	CHD25S2-CU025S	ST025S	CHD25E2-CU025E	IPD25E2
	CHD25G2-CT025L	DR25G2-BU025L	SK025R	DR25S2-BT025S	SU025S	CT025F	IT025E
	CHD25G2-CT025N	DR25G2-BU025N	ST025L		UT025S	CU025F	IT025F
	CHD25G2-CU025L	DR25G2-BU025R	ST025N	DR25S2-BU025S	UU025S	CU025F	ST025E
	CHD25G2-CU025N	HA025L	ST025R	HT025S		DR25E2-BT025E	ST025F
	CHD25G2-CU025N	HA025N	SU025L	HU025S		DR25E2-BT025F	SU025E
	CK025N	HK025R	SU025N			DR25E2-BU025E	SU025F
	CK025R	HT025L	UA025L			DR25E2-BU025F	UT025E
	CT025R	HT025N	UA025N			HT025E	UT025F
	CU025R	HT025R	UK025N			HT025F	UU025E
	DR25G2-BA025L	HK025N	UK025R				UU025F
	DR25G2-BA025N	HU025L	UT025L				
	DR25G2-BA025N	HU025N	UT025N				
	DR25G2-BK025N	HU025R	UT025R				
	DR25G2-BK025R	IPD25G2	UU025L				
	DR25G2-BK025R	IT025L	UU025N				
	DR25G2-BT025L	IT025N	UU025R				
	DR25G2-BT025L	IT025R					

	Gas			Steam/Thermal Oil		Electric	
30 Pound	CHD30G2-CA030L	DR30G2-BT030N	SA030L	CHD30S2-CT030S	IPD30S2	CHD30E2-CT030E	HU030E
			SA030N		IT030S		HU030F
	CHD30G2-CA030N	DR30G2-BT030R	SK030N	CHD30S2-CU030S	ST030S	CHD30E2-CU030E	IPD30E2
	CHD30G2-CT030L	DR30G2-BU030L	SK030R	DR30S2-BT030S	SU030S	CT030F	IT030E
	CHD30G2-CT030N	DR30G2-BU030N	ST030D		UT030S	CU030F	IT030F
	CHD30G2-CU030L	DR30G2-BU030R	ST030L	DR30S2-BU030S	UU030S	DR30E2-BT030E	ST030E
	CHD30G2-CU030N	DR30G2-BU030R	ST030N	HT030S		DR30E2-BT030F	ST030F
	CHD30G2-CU030N	HA030L	SU030L	HU030S		DR30E2-BU030E	SU030E
	CK030N	HA030N	SU030N			DR30E2-BU030F	SU030F
	CK030R	HK030N	SU030R			DR30E2-BU030F	UT030E
	CT030R	HK030R	UA030L			HT030E	UT030F
	CU030R	HT030D	UA030N			HT030F	UU030E
	DR30G2-BA030L	HT030L	UK030N				UU030F
	DR30G2-BA030N	HT030N	UK030R				
	DR30G2-BA030N	HT030R	UT030L				
	DR30G2-BK030N	HU030L	UT030N				
	DR30G2-BK030R	HU030N	UT030R				
	DR30G2-BK030R	HU030R	UU030L				
	DR30G2-BT030D	IPD30G2	UU030N				
	DR30G2-BT030L	IT030L	UU030R				
		IT030N					
		IT030R					

	Gas			Steam/Thermal Oil		Electric	
30 Pound Stacked	CHD30STG 2-CAT30L	DRST30G2- BAT30N	ITT30N ITT30R	CHD30STS2 -CTT30S	IPD30STS2 ITT30S	CHD30STE2 -CTT30E	HUT30E HUT30F
	CHD30STG 2-CAT30N	DRST30G2- BTT30D	SAT30L	CHD30STS2 -CUT30S	STT30S	CHD30STE2 -CUT30E	IPD30STE2
	CHD30STG 2-CTT30L	DRST30G2- BTT30L	SAT30N SKT30N	DRST30S2- BTT30S	SUT30S UTT30S	CTT30F CUT30F	ITT30E ITT30F
	CHD30STG 2-CTT30N	DRST30G2- BTT30N	SKT30R STT30D	DRST30S2- BUT30S	UUT30S	DR335G2- BTT30F	STT30E STT30F
	CHD30STG 2-CUT30L	DRST30G2- BUT30L	STT30L	HTT30S		DR335G2- BUT30F	SUT30E
	CHD30STG 2-CUT30N	DRST30G2- BUT30N	STT30N STT30R	HUT30S		DRST30E2- BTT30E	SUT30F UTT30E
	CKT30N	HAT30L	SUT30L			DRST30E2- BUT30E	UTT30F UUT30E
	CKT30R	HAT30N	SUT30N			HTT30E HTT30F	UUT30F
	CTT30R	HKT30N	SUT30R				
	CUT30R	HKT30R	UAT30L				
	DR335G2- BKT30N	HTT30D HTT30L	UAT30N UKT30N				
	DR335G2- BKT30R	HTT30N	UKT30R				
	DR335G2- BTT30R	HTT30R HUT30L	UTT30L UTT30N				
	DR335G2- BUT30R	HUT30N HUT30R	UTT30R UUT30L				
	DRST30G2- BAT30L	IPD30STG2 ITT30L	UUT30N UUT30R				

	Gas			Steam/Thermal Oil		Electric	
35 Pound	CHD35G2-CA035L	DR35G2-BT035N	IT035R SA035L	CHD35S2-CT035S	IPD35S2 IT035S	CHD35E2-CT035E	HU035E HU035F
	CHD35G2-CA035N	DR35G2-BT035R	SA035N	CHD35S2-CU035S	ST035S	CHD35E2-CU035E	IPD35E2
	CHD35G2-CT035L	DR35G2-BU035L	SK035N SK030R	DR35S2-BT035S	SU035S UT035S	CT035F CU035F	IT035E IT035F
	CHD35G2-CT035N	DR35G2-BU035N	ST035L ST035N	DR35S2-BU035S	UU035S	DR35E2-BT035E	ST035E ST035F
	CHD35G2-CU035L	DR35G2-BU035R	ST035R	HT035S		DR35E2-BT035F	SU035E
	CHD35G2-CU035N	HA035L	SU035L	HU035S		DR35E2-BU035E	SU035F
	CK035N	HA035N	SU035N			DR35E2-BU035F	UT035E
	CK035R	HK035N	SU035R			DR35E2-BU035F	UT035F
	CT035R	HK035R	UA035L			HT035E	UU035E
	CU035R	HT035L	UA035N			HT035F	UU035F
	DR35G2-BA035L	HT035N	UK035N				
	DR35G2-BA035N	HT035R	UK035R				
	DR35G2-BK035N	HU035L	UT035L				
	DR35G2-BK035R	HU035N	UT035N				
	DR35G2-BT035L	HU035R	UT035R				
		IPD35G2	UU035L				
		IT035L	UU035N				
		IT035N	UU035R				

	Gas			Steam/Thermal Oil	Electric
45 Pound Stacked	CKT45N	DRST45G2- BAT45L	IPD45STG2	Not Applicable	Not Applicable
	CKT45R		ITT45L		
	CTT45L	DRST45G2- BAT45N	ITT45N		
	CTT45N	DRST45G2-	ITT45R		
	CTT45R	BTT45D	SAT45L		
	DR445G2- BAT45L	DRST45G2- BTT45L	SAT45N		
	DR445G2- BAT45N	DRST45G2- BTT45N	SKT45N		
	DR445G2- BKT45N	DRST45G2- BUT45L	SKT45R		
	DR445G2- BKT45R	DRST45G2- BUT45N	STT45D		
	DR445G2- BTT45D	HAT45L	STT45L		
	DR445G2- BTT45L	HAT45N	STT45N		
	DR445G2- BTT45N	HKT45N	STT45R		
	DR445G2- BTT45R	HKT45R	SUT45L		
	DR445G2- BUT45L	HTT45D	SUT45N		
	DR445G2- BUT45N	HTT45L	SUT45R		
	DR445G2- BUT45R	HTT45N	UAT45L		
	DR445G2- HUT45L	HTT45R	UAT45N		
	DR445G2- HUT45N	HUT45L	UKT45N		
	DR445G2- HUT45R	HUT45N	UKT45R		
			UTT45L		
			UTT45N		
			UTT45R		
			UUT45L		
			UUT45N		
			UUT45R		

	Gas			Steam/Thermal Oil		Electric	
50 Pound	CA050L	DR55G2-BA050L	IT050L	CT050S	HT050S	CT050E	HT050E
	CA050N		IT050N	CT050T	HT050T	CU050E	HU050E
	CK050N	DR55G2-BA050N	SA050L	CU050S	HU050T	DR50E2-BT050E	IPD50E2
	CT050L		SA050N	CU050T	IPD50S2		IT050E
	CT050N	DR55G2-BT050D	SK050N	DR50S2-BT050S	IT050S	DR50E2-BU050E	ST050E
	CU050L	DR55G2-BT050L	ST050D		IT050T	DR55E2-BT050E	SU050E
	CU050N		ST050L	DR50S2-BT050T	ST050S		UT050E
	DR50G2-BA050L	DR55G2-BT050N	ST050N	DR50S2-BU050S	ST050T	DR55E2-BU050E	UU050E
	DR50G2-BA050N	DR55G2-BU050L	SU050L		SU050S		
		DR55G2-BU050N	SU050N	DR50S2-BU050T	SU050T		
	DR50G2-BK050N	HA050L	UA050L		UT050S		
	DR50G2-BT050D	HA050N	UA050N	DR55S2-BT050S	UT050T		
		HK050N	UK050N	DR55S2-BT050T	UU050S		
	DR50G2-BT050L	HT050D	UT050L		UU050T		
	DR50G2-BT050N	HT050L	UT050N	DR55S2-BU050S			
	DR50G2-BU050L	HT050N	UU050L	DR55S2-BU050T			
	DR50G2-BU050N	HU050L	UU050N				
		HU050N					
		IPD50G2					

	Gas			Steam/Thermal Oil	Electric	
55 Pound	CA055L		SA055L	Not Applicable	CT055E	HU055E
	CA055N	DR55SG2-BT055R	SA055N		CT055F	HU055F
	CK055N	DR55SG2-BU055L	SK055N		CU055E	IPD55E2
	CK055R		SK055R		CU055F	IT055E
	CT055L	DR55SG2-BU055N	ST055D		DR55SE2-BT055E	IT055F
	CT055N		ST055L			ST055E
	CT055R	DR55SG2-BU055R	ST055N		DR55SE2-BT055F	ST055F
	CU055L	HA055L	ST055R		DR55SE2-BU055E	SU055E
	CU055N	HA055N	SU055L			SU055F
	CU055R	HK055N	SU055N		DR55SE2-BU055F	UT055E
	DR55SG2-BA055L	HK055R	SU055R		HT055E	UT055F
	DR55SG2-BA055N	HT055D	UA055L		HT055F	UU055E
	DR55SG2-BK055N	HT055L	UA055N			UU055F
	DR55SG2-BK055R	HT055N	UK055N			
	DR55SG2-BT055D	HT055R	UK055R			
	DR55SG2-BT055L	HU055L	UT055L			
	DR55SG2-BT055N	HU055N	UT055N			
	DR55SG2-BT055R	HU055R	UT055R			
	DR55SG2-BT055L	IPD55G2	UU055L			
	DR55SG2-BT055N	IT055L	UU055N			
		IT055N	UU055R			
		IT055R				

	Gas			Steam/Thermal Oil		Electric	
75 Pound	CA075L	DR75G2-BU075R	IT075N	CT075S	IPD75S2	CT075E	HT075E
	CA075N		IT075R	CT075T	IT075S	CT075F	HT075F
	CK075N	DR80G2-BA075L	SA075L	CU075S	IT075T	CU075E	HU075E
	CK075R	DR80G2-BA075N	SA075N	CU075T	ST075S	CU075F	HU075F
	CT075L		SK075N	DR75S2-BT075S	ST075T	DR75E2-BT075E	IPD75E2
	CT075N	DR80G2-BT075D	SK075R		SU075S		IT075E
	CT075R	DR80G2-BT075L	ST075D	DR75S2-BT075T	SU075T	DR75E2-BT075F	IT075F
	CU075L		ST075L	DR75S2-BU075S	UT075S	DR75E2-BU075E	ST075E
	CU075N	DR80G2-BT075N	ST075N		UT075T		ST075F
	CU075R		ST075R	DR75S2-BU075T	UU075S	DR75E2-BU075F	SU075E
	DR75G2-BA075L	DR80G2-BU075L	STF75L		UU075T		SU075F
	DR75G2-BA075N	DR80G2-BU075N	STF75N	DR80S2-BT075S		DR80E2-BT075E	UT075E
	DR75G2-BK075N	HA075L	SU075L	DR80S2-BT075T		DR80E2-BU075E	UT075F
	DR75G2-BK075R	HA075N	SU075R	DR80S2-BU075S			UU075E
	DR75G2-BT075D	HK075N	UA075L	DR80S2-BU075T			UU075F
	DR75G2-BT075L	HK075R	UA075N				
	DR75G2-BT075N	HT075D	UK075N	HT075S			
	DR75G2-BT075R	HT075L	UK075R	HT075T			
	DR75G2-BT075S	HT075N	UT075L	HU075S			
	DR75G2-BT075T	HT075R	UT075N	HU075T			
	DR75G2-BT075U	HU075L	UT075R				
	DR75G2-BT075V	HU075N	UTF75L				
	DR75G2-BT075W	HU075R	UTF75N				
	DR75G2-BT075X	IPD75G2	UU075L				
	DR75G2-BT075Y	IT075L	UU075N				
			UU075R				

	Gas			Steam/Thermal Oil		Electric	
120 Pound	CA120L CA120N CK120N CT120L CT120N CU120L CU120N DR120G2-BA120L DR120G2-BA120N DR120G2-BK120N DR120G2-BT120L DR120G2-BT120N	DR120G2-BU120L DR120G2-BU120N HA120L HA120N HK120N HT120L HT120N HU120L HU120N IPD120G2 IT120L IT120N	SA120L SA120N SK120N ST120L ST120N SU120L SU120N UA120L UA120N UK120N UT120L UT120N UU120L UU120N	CT120S CT120T CU120S CU120T DR120S2-BT120S DR120S2-BT120T DR120S2-BU120S DR120S2-BU120T HT120S HT120T HU120S HU120T	IPD120S2 IT120S IT120T ST120S ST120T SU120S SU120T UT120S UT120T UU120S UU120T	CT120E CU120E DR120E2-BT120E DR120E2-BU120E HT120E	HU120E IT120E ST120E SU120E UT120E UU120E
170 Pound	CA170L CA170N CK170N CT170L CT170N CU170L CU170N DR170G2-BA170L DR170G2-BA170N DR170G2-BK170N DR170G2-BT170L DR170G2-BT170N	DR170G2-BU170L DR170G2-BU170N HA170L HA170N HK170N HT170L HT170N HU170L HU170N IPD170G2 IT170L IT170N	SA170L SA170N SK170N ST170L ST170N SU170L SU170N UA170L UA170N UK170N UT170L UT170N UU170L UU170N	CT170S CT170T CU170S CU170T DR170S2-BT170S DR170S2-BT170T DR170S2-BU170S DR170S2-BU170T HT170S HT170T HU170S HU170T	IPD170S2 IT170S IT170T ST170S ST170T SU170S SU170T UT170S UT170T UU170S UU170T	Not Applicable	

	Gas			Steam/Thermal Oil		Electric
200 Pound	CA200L CA200N CT200L CT200N CU200L CU200N DR200G2-BA200L DR200G2-BA200N DR200G2-BT200L DR200G2-BT200N	DR200G2-BU200L DR200G2-BU200N HA200L HA200N HT200L HT200N HU200L HU200N IT200L IT200N SA200L	SA200N ST200L ST200N SU200L SU200N UA200L UA200N UT200L UT200N UU200L UU200N	CT200S CT200T CU200S CU200T DR200S2-BT200S DR200S2-BT200T DR200S2-BU200S DR200S2-BU200T HT200S HT200T HU200S	HU200T IT200S IT200T ST200S ST200T SU200S SU200T UT200S UT200T UU200S UU200T	Not Applicable

Includes models with the following control suffixes:

EO – OPL electronic

RE – reversing OPL electronic

Nameplate Location

The nameplate is located on the back of the machine and is programmed in the control.

Preliminary Information

About the Control

This control is an advanced, programmable computer that lets the owner control most machine features by pressing a sequence of keypads.

The control allows the owner to program custom cycles, run diagnostic cycles, and retrieve audit and error information.

Tumble Dryers shipped from the factory have default cycles and other settings built in. The owner can change the default cycle or any cycle.

IMPORTANT: It is extremely important that the tumble dryer has a positive ground and that all mechanical and electrical connections are made before applying power to or operating the tumble dryer.

DIP Switch Configuration

Make sure DIP switches are configured properly for the machine. Refer to *Figure 1*.

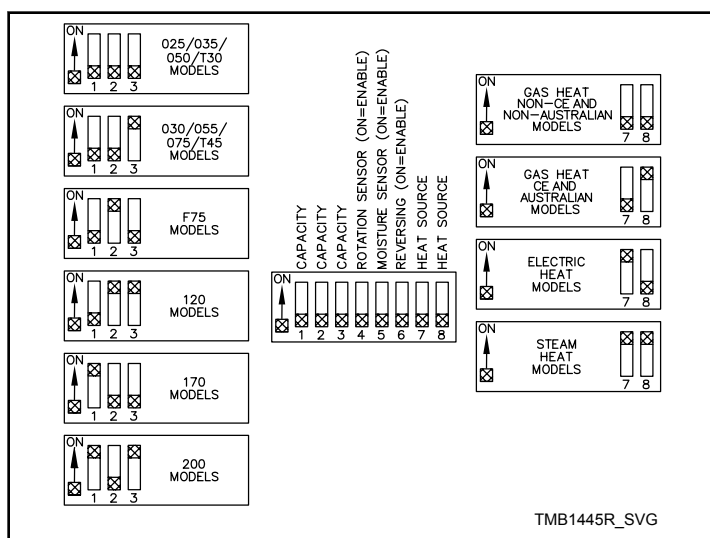


Figure 1

Power Failure Recovery

If a cycle is in progress when the power fails, and if the power outage lasts three or more seconds, the cycle is lost and cannot be resumed when power recovers. If the power outage lasts less than three seconds, the control will resume the cycle when the power recovers.

Communications

The control has the ability to communicate with a PDA and a laptop with an IrDA device running the control software. Devices

such as PDAs and laptops that are IrDA capable (able to transmit information to machine) that have been tested and approved for use with the software can be used as a tool for managing the machine.

Audit Information

The control collects and stores audit information, which can be accessed with a PDA or PC. Refer to the following list for some of the available audit information. Refer to **PC and PDA Application User Instructions**.

- End of Cycle to Loading Door Open Time
- End of Cycle to Start of Next Cycle Time
- Total Number of Machine Cycles
- Total Number of Operating Minutes
- Power Failure Audit Data

The PDA or PC can receive audit and program data from the control, and send programming data and diagnostic commands to the control. Refer to **PC and PDA Application User Instructions** for additional information.

Some of the above listed audit data is available manually. Refer to *How to Enter Audit Feature* section.

Restore to Factory Defaults

When the user resets to factory default, the control resets all of the default values. The control also resets Machine Cycles #1 through #30. The control will also reset the following to factory-defaults:

Default Global Settings

Ignition Retries = 3

Temperature Units = Fahrenheit (°F)

High (H) Temperature = 190 (°F)

Medium (M) Temperature = 160 (°F)

Low (L) Temperature = 140 (°F)

Very Low (VL) Temperature = 120 (°F)

Cool Down Temperature = 100 (°F)

Cool Down Time = 2 (minutes)

Rapid Advance = Disabled

Multi-Segment Cycles = Disabled

Daylight Saving = Enabled

Key Pad Audio = Enabled

End of Cycle Audio = Enabled (5 seconds)

Preliminary Information

End of Cycle External Signal = Enabled (5 seconds)

Clean Lint Screen Reminder = Off

Display Limit Errors = Disabled

Manual Diagnostics = Enabled

*Manual Programming = Enabled

**Reverse Cylinder Rotate Time = 30 (seconds)

**Reverse Cylinder Stop Time = 6 (seconds)

**Advanced Reversing = Disabled

***Advanced Options for Moisture Dry = Disabled

***Display Moisture Sensor Error = Disabled

*If manual programming is disabled, programming changes to the control can only be made with an external communication device. Refer to **PC and PDA Application User Instructions**.

**Only available on units equipped with reversing feature.

***Only available on units equipped with moisture sensing feature.

Refer to Factory Defaults, Menu section for information on Restoring Factory Defaults.

Entering Program Mode

Press and hold Stop, then Back, then Up to enter the programming options.

Control Identification

Operational Keypad

The control includes five keypads. These functions are available to the operator and are intended to control and manage operation of the tumble dryer. Refer to *Figure 2*, *Figure 3*, *Figure 4*, *Figure 5* and *Table 1*.

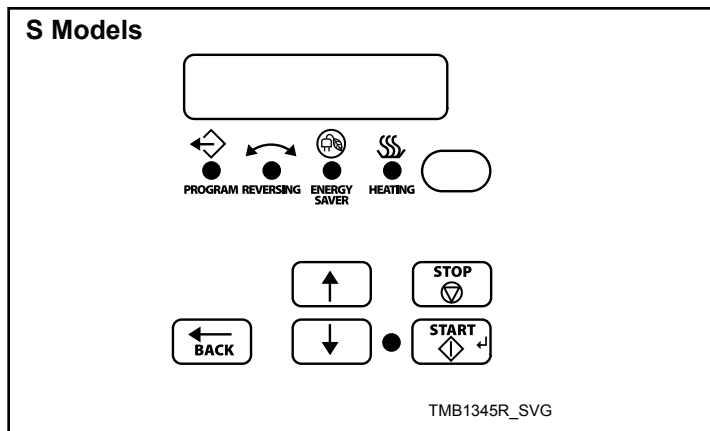


Figure 2

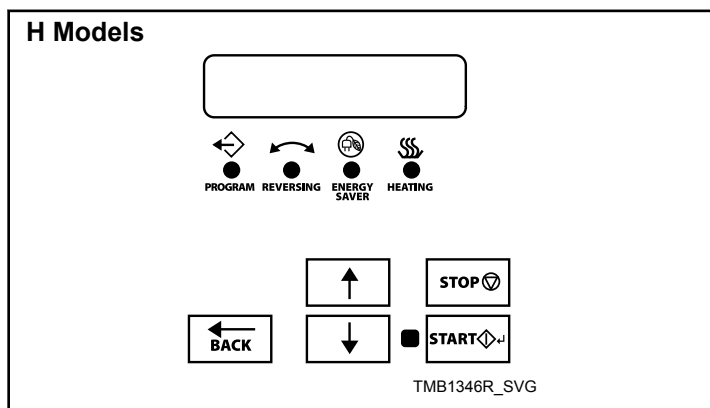


Figure 3

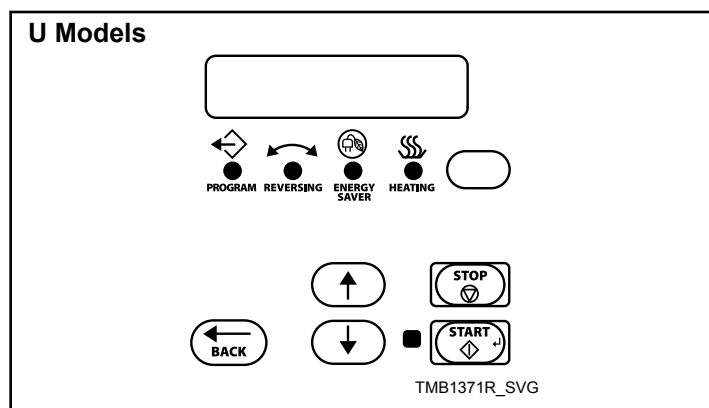


Figure 4

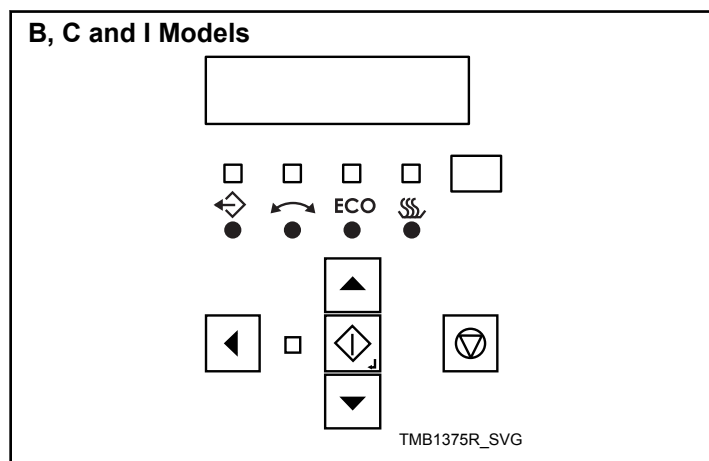



Figure 5

NOTE: The reversing feature is not available on all models.

Keypad		Description
UP ARROW	↑	Press to scroll through menu options and edit parameter values.
DOWN ARROW	↓	Press to scroll through menu options and edit parameter values.
BACK ARROW	←	Press to go to the list of parameters without saving the value when adjusting the value of a programming parameter. Also, press to go to the previous menu when the control displays a parameter, return to Idle Mode when the control displays the main menu or clear an error message from the display.
STOP	⏏	Press to pause a cycle while in Run Mode or abort a cycle if the control is in Pause Mode.

Keypad		Description
START		Press to start the selected cycle, select an option when in the menu or save a value when editing a parameter.





Status Indicator LED		Description
PROGRAM		LED will light up if the control is in Manual Programming Mode or if a cycle is being modified.
REVERSING		LED will light up when cylinder is reversing.
ENERGY SAVER		LED will light up when a Moisture Dry or Auto Dry cycle is running.
HEATING		LED will light up when the machine is in the heat portion of the cycle.

Table 1

Operation Modes

General Modes of Operation

In each mode of operation, the user may press keypads or communicate with the control to change the displayed menu.

Power-up Mode

The control enters this mode at power-up. When power is applied to the tumble dryer, the control becomes active and will display its software version as SHH (HH is the version number) for one second. If the control was not powered down during a running cycle, it will enter the Idle Mode. After the control completes operation in the Power-up Mode it will enter Idle Mode.

Idle Mode

The control is ready for operation in Idle Mode. Control can display different menus depending on user input (keypad press, opening or closing the loading door, or PDA communication). If there is no user input for 10 minutes, display will turn off.

While in Idle Mode the control will display the active cycles. Anytime the control returns to Idle Mode after a cycle has been run, the control will display the last run cycle (except the first time the control is powered up it will show the first cycle).

Press the up arrow to increment the cycle number. Press the down arrow to decrease the cycle number. If the Start keypad is pressed and either the loading door or lint door is open the control will show door for five seconds or until door is closed.

If the control is in Idle Mode, Cycle Menu is displayed, loading and lint door closed, and the Start keypad is pressed, control will enter Run Mode.

Run Mode

The Control enters Run Mode during a cycle. Loading and lint doors are closed during Run Mode.

While in Run Mode, any programmed value can be changed for the currently running cycle. Press the Up or Down keypads to scroll through the displays. Press the Back keypad to select a parameter and press Up or Down to change the value. Once the cycle is complete, the control will go back to the original programmed parameters. Refer to the Tables below for each cycle type's displays.

Press Stop keypad to stop cycle and enter Pause Mode. Control enters Pause Mode if loading or lint door opens. Press Start to Rapid Advance.

Time Dry Cycle Display	6 Digit Display	Description
Display 1	HHH HH	Cycle Time Remaining in Minutes and Seconds (HH)
Display 2	CHH SY or CHH Cd	Cycle Number (HH) and Segment Number (Y) or Cycle Number (HH) and Segment Cooldown
Display 3	A HHHF or A HHHC	Actual Temperature
Display 4	P HHHF or P HHHC	Programmed Temperature

Time Dry Cycle Display	6 Digit Display	Description
Display 5	SAVE	Custom Save Mode Display

Table 2

Moisture Dry Cycle Display	6 Digit Display	Description
Display 1	HH	Actual Moisture Level
Display 2	CHH SY or CHH Cd	Cycle Number (HH) and Segment Number (Y) or Cycle Number (HH) and Segment Cooldown
Display 3	A HHHF or A HHHC	Actual Temperature
Display 4	P HHHF or P HHHC	Programmed Temperature
Display 5	PnCHH	Programmed Moisture Level
Display 6	SAVE	Custom Save Mode Display

Table 3

Auto Dry Cycle Display	6 Digit Display	Description
Display 1	HHH HH	Elapsed Time in Minutes and Seconds (HH)
Display 2	CHH SY or CHH Cd	Cycle Number (HH) and Segment Number (Y) or Cycle Number (HH) and Segment Cooldown
Display 3	A HHHF or A HHHC	Actual Temperature
Display 4	P HHHF or P HHHC	Programmed Temperature
Display 5	P HH	Programmed Target Level

Table 4

Rapid Advance Mode

If the Rapid Advance Option is enabled, the user can advance a running machine cycle by pressing the Start keypad. In a Time Dry cycle, pressing the Start keypad will decrease the remaining time by one minute. Pressing and holding the Start keypad will decrease the remaining time by four minutes per second until the end of the cycle.

In the Auto-Dry and Moisture Dry cycles, pressing the Start keypad will advance the cycle to the next enabled segment. Note that Auto-Dry cycles only have one programmable segment.

In the Cool Down segment, pressing the Start keypad will decrease the remaining time by one minute.

When the cycle is completed, the audit counter, Total Rapid Advance Cycles, is incremented rather than the Total Machine Cycles audit counter. If the Rapid Advance Option is disabled preventing a manual Rapid Advance, the user may still execute a Rapid Advance using the PDA or PC. Refer to **PC and PDA Application User Instructions** for additional information on using a PDA or PC to Rapid Advance a cycle.

Pause Mode

If Stop keypad is pressed or the loading or lint door is opened while in Run Mode, control enters Pause Mode.

If the door was opened to enter Pause Mode, the control will show door until the door is closed or Pause Mode is exited. If the door is closed, the control will show PUSH for one second followed by StArt for one second as well as flash the Start keypad LED one second on/one second off.

If the Stop keypad was pressed to enter Pause Mode and the loading door is closed, the control will show PAUSE until Pause Mode is exited.

Any time PAUSE is shown on the control, the Start keypad LED will flash one second on/one second off to prompt the user to restart the cycle.

Error Mode

This mode will be entered to display all fatal machine errors.

Communication Mode

This mode is entered whenever the control is communicating with a PDA. Refer to **PC and PDA Application User Instructions**.

Cool Down Mode

The control enters the Cool Down Mode after the heat segment of the cycle is completed or fatal error occurs. The control turns the heater off and for steam heated units turns the damper motor on. The cool down segment will end once the cool down temperature

has been reached or the programmed cool down time expires, whichever happens first.

End of Cycle Mode

The control enters End of Cycle Mode after the cool down segment is finished. The display will toggle between LoAd and rEAdy for one second each until End of Cycle Mode is exited. If the door has not been opened or a keypad has not been pressed after two minutes, the machine will enter Extended Tumble Mode. This mode is exited when the door is opened or Stop keypad is pressed. The control will then return to Idle Mode.

Extended Tumble Mode

The Extended Tumble Mode has two portions. The Anti-Wrinkle Tumble is entered two minutes after the cycle has ended if the door is not opened. The cylinder will tumble for 30 seconds every two minutes for up to one hour.

If the door hasn't been opened and no keys have been pressed one hour after the Anti-Wrinkle Tumble has ended, the control increments the Anti-Wrinkle Time Exceeded audit counter and enters Delayed Tumble. The cylinder will tumble for two minutes every 60 minutes for up to 18 hours.

Reversing Mode (reversing models only)

Models equipped with the reversing feature will rotate in the forward direction, pause, rotate in the reverse direction and then pause for programmable times and segments of the cycle. Factory default reversing rotate time is 30 seconds and reversing stop time is 6 seconds for all cycles with reversing enabled.

Entering Diagnostic Mode From Idle Mode

When entered from the Idle Mode, the control will be running a test selected by the user via keypad presses or communication with a device.

Displaying Temperature Mode

The temperature can be displayed during an active cycle by pressing the up arrow or down arrow to scroll through the menu. Select A:(Temp Value) to see the actual or current temperature. Select P:(Temp Value) to see the programmed temperature.

Machine Cycle Definition and Operation

There are 30 machine cycles that can be selected and run. Machine cycles can be modified or made “unavailable” by manually editing them in Modify Cycle Menu or by using the PDA to download a modified machine cycle into the control. Machine cycles cannot be deleted, but can be made “unavailable” so that they are not visible from the Cycle Menu. New machine cycles cannot be created, but existing machine cycles that have been edited to be “unavailable” may be re-edited to be available again.

2. Press Start to start selected cycle.

NOTE: If door is not closed when the Start keypad is pressed, display will show door.

Machine Cycle Operation

When a cycle is run, the control runs the cycle segment by segment in a sequence. First the control examines the Cycle Type chosen to determine if it is a Time Dry, Auto-Dry or Moisture Dry (if equipped) cycle type. Then the first segment is examined to see if it is programmed to on or off. If the segment is programmed to off, control skips to the next segment.

At the start of some machine cycles, the control displays a Total Remaining Cycle time. This time is taken from the machine cycles as they are programmed. The Total Remaining Cycle Time begins to count down as soon as the cycle is started.

Time Dry Cycle

In this type of cycle, the control will regulate the temperature and time duration as programmed for the cycle chosen.

Auto-Dry Cycle

If this type of cycle is selected, the control determines the cycle time based on the temperature and dryness level programmed for the cycle chosen.

Moisture Dry Cycle (if equipped)

In this type of cycle, the control checks the programmed material type, programmed target moisture content, programmed temperature and the data received from the moisture sensing system to achieve the desired results.

Rotation Sensor Equipped Machines

On machines equipped with a rotation sensor, the control monitors the rotation sensor to verify the cylinder is rotating. The control calculates the cylinder's RPM. If the RPM drops to zero while the cylinder is supposed to be rotating, the control will advance to the Cool Down segment of the cycle and an error message will be displayed.

To Start a Cycle

1. Press the Up or Down keypad to change cycles.

Entering the Manual Mode

For programming, testing, and retrieving information from the control, it is often necessary to enter the Manual Mode by following the steps below.

For an overview of entering the Manual Mode, refer to the flow-chart.

How to Enter the Manual Mode

1. Control must be in Idle Mode.
2. Press and hold the Stop keypad, then press and hold the Back keypad, then press the Up keypad.
3. The display will show Prog.
4. Press the Up or the Down keypad to scroll through the options until the desired option appears in the display.
5. Press the Start keypad to enter the displayed mode.
6. To exit, press the Back keypad. The control will revert back to Idle Mode.

Manual Programming can only be turned on or off with an external device. Refer to the appropriate instruction manual. Diagnostics can be turned on and off using an external device by manual programming.

By default, Manual Programming is turned on.

The manual features available in each group are as follows (the menu displayed on the display in this mode is in parentheses).

Manual Programming (Prog)

Manual Read Audit (Audit)

Manual Reset (rESet)

Diagnostic Tests (diAg)

If a manual parameter is turned off or unavailable (ex: trying to enter diagnostics while a cycle is running), the display will change from the selected feature to oFF, an audio signal will sound for one second and the features in the parameter cannot be entered. The display will then return to the selected feature.

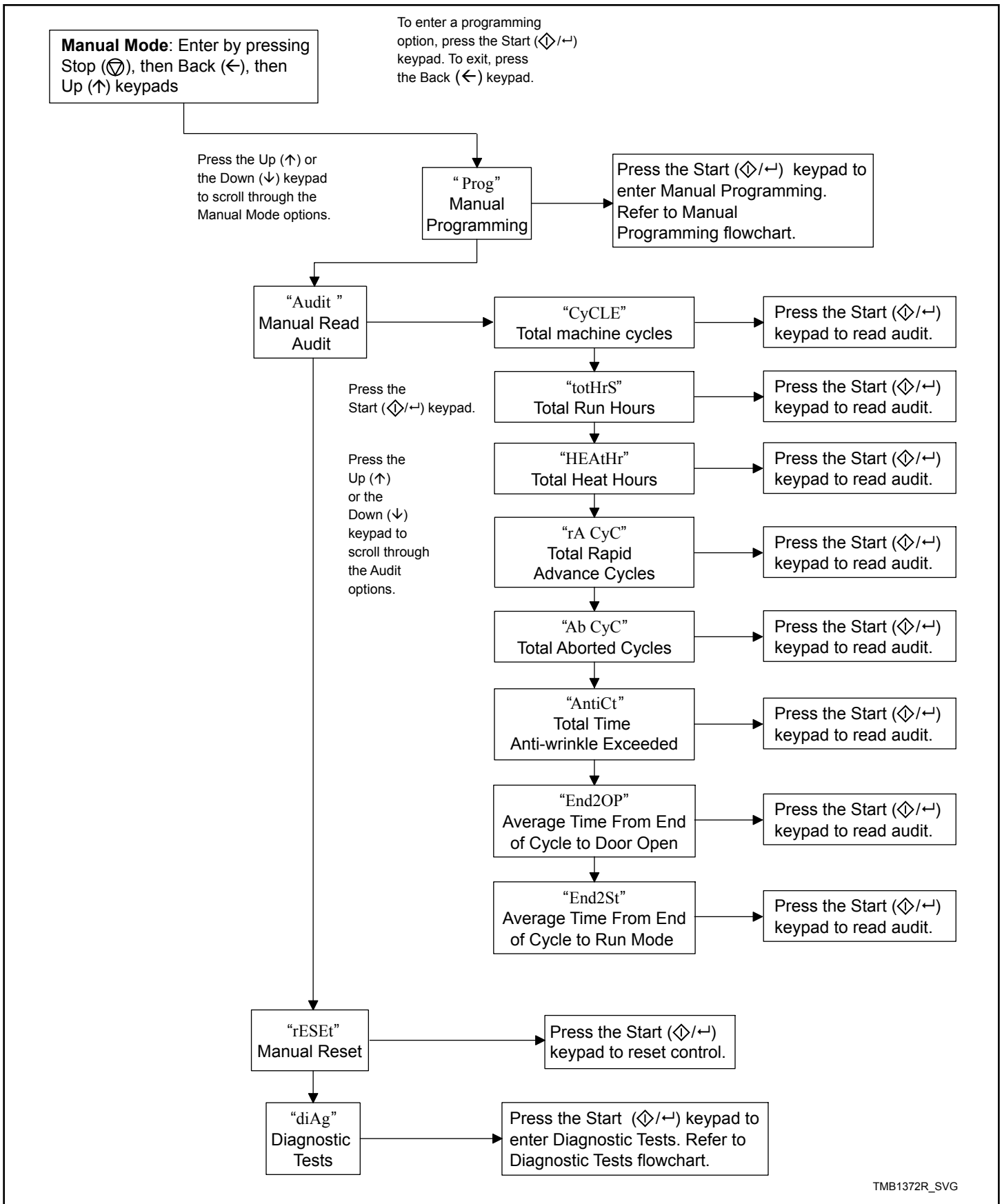


Figure 6

Programming Control

What Can Be Programmed?

This feature allows the owner to program cycle parameters and other features by using the keypads. The control must have the Manual Programming Mode enabled, which is the factory default. This mode can only be turned OFF and ON by using an external device. Refer to this section when programming the control.

For an overview of the programming organization, refer to the flowcharts on the following pages.

For more advanced users, a quick reference list of the options available through the programming mode is located below.

NOTE: The codes in the Option Display column of the Programmable Options List are what will show in the display when that option is selected.

How to Program a Cycle

1. Press the Up or Down keypad to scroll through the option list.
2. Press Start to select an option to program.
3. Press the Up or Down keypad to change the value of that option.
4. Press Start to save the change.

NOTE: Press the Back keypad to leave the option without saving any change.

5. After pressing Start, control will go to the next option in the list.
6. Press Back keypad to go to Idle Mode.

Programmable Options Available

Option Number	Option Display	Description	Default Value	Value Range
1	CyCLE-	Cycle Programming	-	-
a	CyCHH-	Cycle HH (HH represents cycles 1-30)	-	-
1	CHHEn	Cycle HH Enable Disable	-	on/oFF
2	CHHtyP	Cycle HH Type	-	tinE (Time Dry), Auto (Auto Dry), noiSt (Moisture Dry)
3	CHHnt	Cycle HH Matieral Type	-	0 (Cotton), 1 (Blend), 2 (Bedding), 3 (Delicate), 4 (Synthetic), 5 (Wool)
4	CHHtPt	Cycle HH Time Past Target (minutes)	-	0-15
5	CHHS1-	Segment 1	-	CHHS11 (Segment 1 Enable/Disable), CHHS12 (Segment 1 Time), CHHS13 (Segment 1 Temperature), CHHS14 (Segment 1 Auto Dry Target Level), CHHS15 (Segment 1 Moisture Dry Target Moisture), CHHS16 (Segment 1 Reversing Enable/ Disable)
6	CHHS2-	Segment 2	-	CHHS21 (Segment 2 Enable/Disable), CHHS22 (Segment 2 Time), CHHS23 (Segment 2 Temperature), CHHS24 (Segment 2 Auto Dry Target Level), CHHS25 (Segment 2 Moisture Dry Target Moisture), CHHS26 (Segment 2 Reversing Enable/ Disable)

Option Number	Option Display	Description	Default Value	Value Range
7	CHHS3-	Segment 3	-	CHHS31 (Segment 3 Enable/Disable), CHHS32 (Segment 3 Time), CHHS33 (Segment 3 Temperature), CHHS34 (Segment 3 Auto Dry Target Level), CHHS35 (Segment 3 Moisture Dry Target Moisture), CHHS36 (Segment 3 Reversing Enable/ Disable)
8	CHHS4-	Segment 4	-	CHHS41 (Segment 4 Enable/Disable), CHHS42 (Segment 4 Time), CHHS43 (Segment 4 Temperature), CHHS44 (Segment 4 Auto Dry Target Level), CHHS45 (Segment 4 Moisture Dry Target Moisture), CHHS46 (Segment 4 Reversing Enable/ Disable)
9	CHHS5-	Segment 5	-	CHHS51 (Segment 5 Enable/Disable), CHHS52 (Segment 5 Time), CHHS53 (Segment 5 Temperature), CHHS54 (Segment 5 Auto Dry Target Level), CHHS55 (Segment 5 Moisture Dry Target Moisture), CHHS56 (Segment 5 Reversing Enable/ Disable)
10	CHHCd-	Cool Down	-	CHHCd1 (Cool Down Temperature), CHHCd2 (Cool Down Time), CHHCd3 (Cool Down Segment Reversing Enable/Disable)
11	CHHr-	Reversing	-	CHH r1 (Cycle Reversing Enable/Disable), CHH r2 (Cycle Reversing Rotate Time), CHH r3 (Cycle Reversing Stop Time)
2	Cd-	Global Cool Down	-	-
a	Cd 1	Cool Down Temperature	100°F [38°C]	70°-110°F [21°-43°C]
b	Cd 2	Cool Down Time (minutes)	2	1-15
3	rEu-	Global Reversing Parameters	-	-
a	rEu 1	Rotate Time (seconds)	3 (30)	3-9 (30-540 seconds)
b	rEu 2	Stop Time (seconds)	0 (6)	0-4 (6-10 seconds)
c	rEu 3	Advanced Reversing	0	0 (oFF), 1 (on)
4	tEnP-	Global Temperatures	-	-
a	tEnP 1	Global Very Low Temperature	120°F [49°C]	100°-120°F [38°-49°C]
b	tEnP 2	Global Low Temperature	140°F [60°C]	120°-140°F [49°-60°C](50, 75, 120, 170, 200 Pound Models), 105°-145°F [41°-63°C](25, 30, T30 Pound Models), 125°-155°F [52°-68°C](35, T45, 55 Pound Models)

Option Number	Option Display	Description	Default Value	Value Range
c	tEnP 3	Global Medium Temperature	160°F [71°C]	140°-160°F [60°-71°C](50, 75, 120, 170, 200 Pound Models), 135°-160°F [57°-71°C](25, 30, T30 Pound Models), 145°-165°F [63°-74°C](35, T45, 55 Pound Models)
d	tEnP 4	Global High Temperature	190°F [88°C]	160°-190°F [71°-88°C](35, T45, 55, 50, 75, 120, 170, 200 Pound Models), 155°-190°F [68°-88°C](25, 30, T30 Pound Models)
5	Audio-	Global Audio Signal	-	-
a	Aud 1	End of Cycle	1	0 (oFF), 1 (on)
b	Aud 2	End of Cycle Duration (seconds)	5	1-120
c	Aud 3	Keypad Feedback	1	0 (oFF), 1 (on)
6	ESig-	External Signal	-	-
a	ESig 1	External Signal End of Cycle	1	0 (oFF), 1 (on)
b	ESig 2	External Signal End of Cycle Duration (seconds)	5	1-120
7	nuLSEg	Multi-Segment Cycles	0	1 (Enable), 0 (Disable)
8	ndryOP	Advanced Moisture Dry Options	0	1 (Enable), 0 (Disable)
9	Error-	Error Displays	-	-
a	EdiSPL	Display Limit Errors	0	1 (Enable), 0 (Disable)
b	noiSt	Display Moisture Sensor Error	1	1 (Enable), 0 (Disable)
10	t FC	Temperature	0	0 (Fahrenheit), 1 (Celsius)
11	AI g	Auto Ignite Retry	3	0-255
12	L int	Clean Lint Reminder	0	0 (off)-255
13	rtC-	Real Time Clock	-	-
a	rtC 1	Minutes	-	0-59
b	rtC 2	Hours	-	0-23
c	rtC 3	Day	-	1-7
d	rtC 4	Date	-	1-31
e	rtC 5	Month	-	1-12

Option Number	Option Display	Description	Default Value	Value Range
f	rtC 6	Year	-	0-99
g	rtC 7	Daylight Savings	1	1 (Enable), 0 (Disable)
14	rAPdEn	Manual Rapid Advance	0	1 (Enable), 0 (Disable)
15	diAgEn	Manual Diagnostics	1	1 (Enable), 0 (Disable)

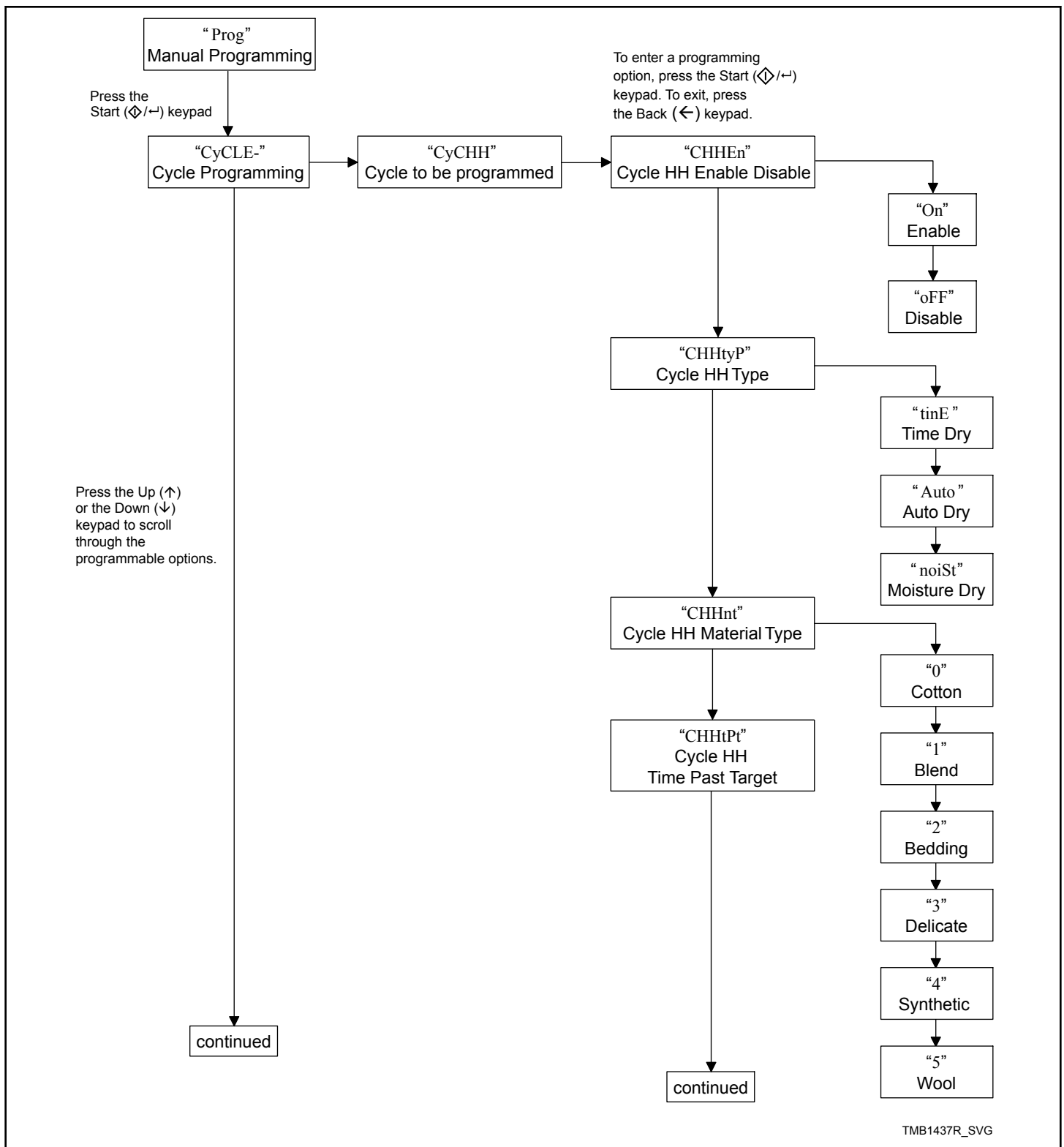


Figure 7

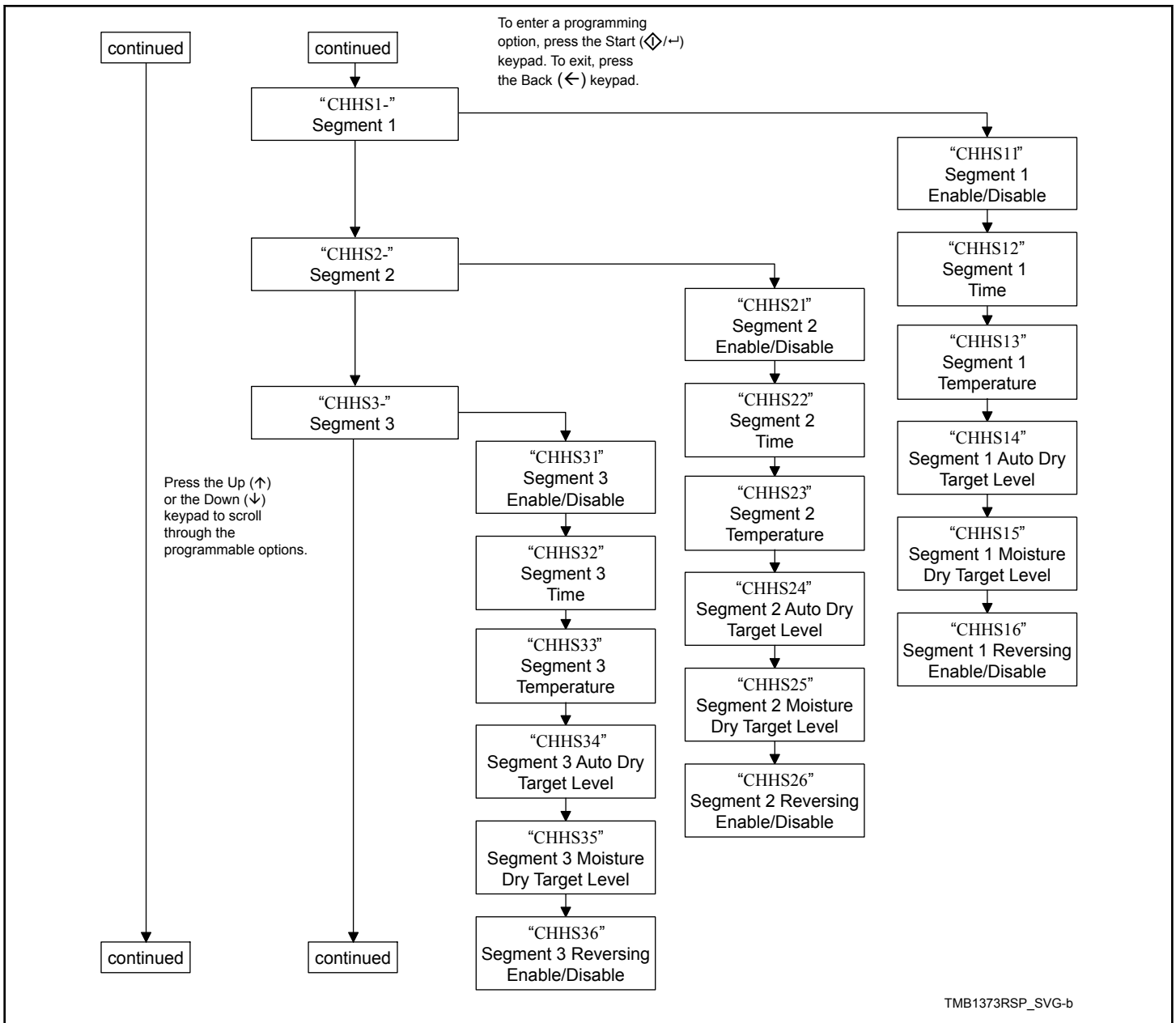


Figure 8

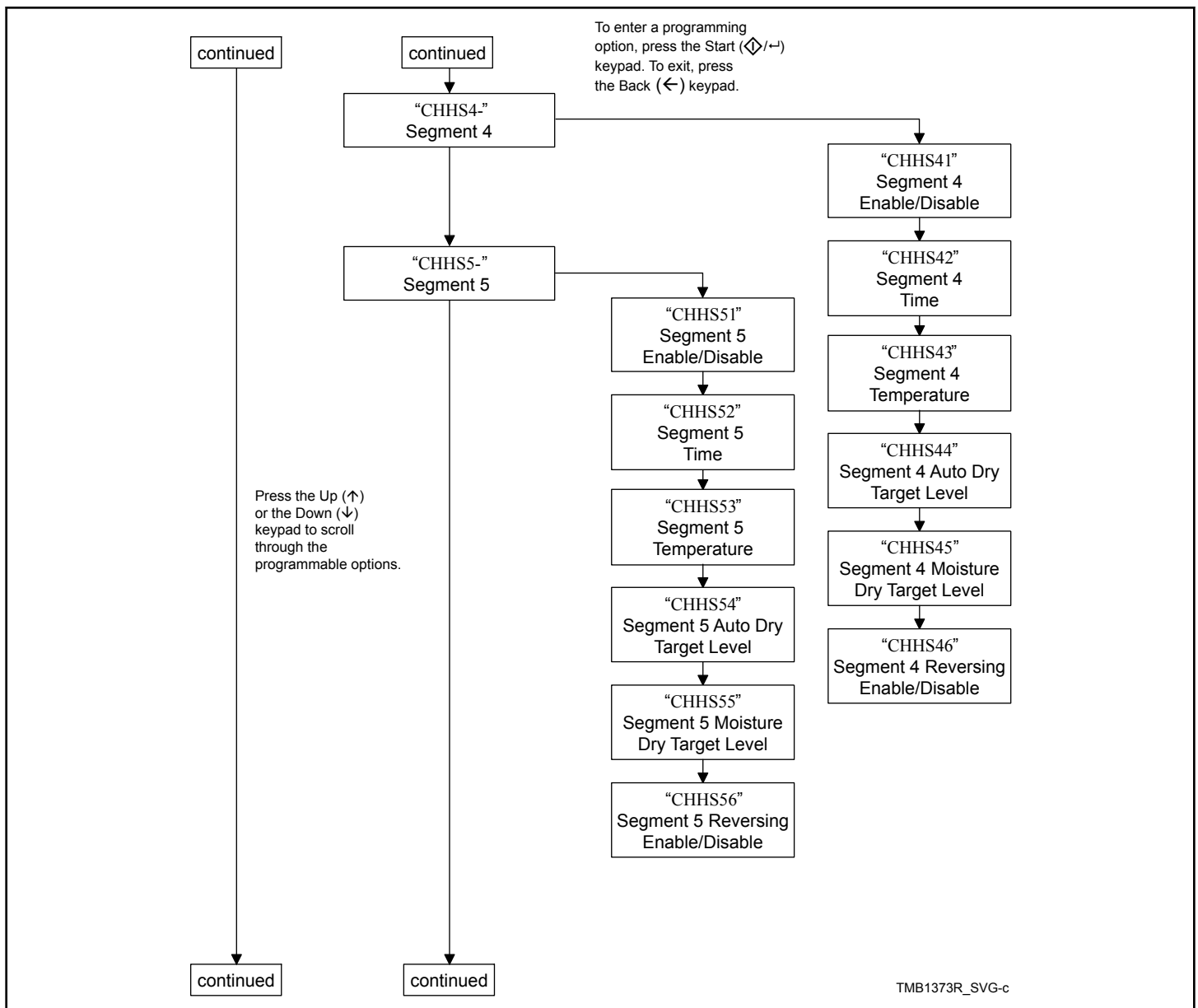


Figure 9

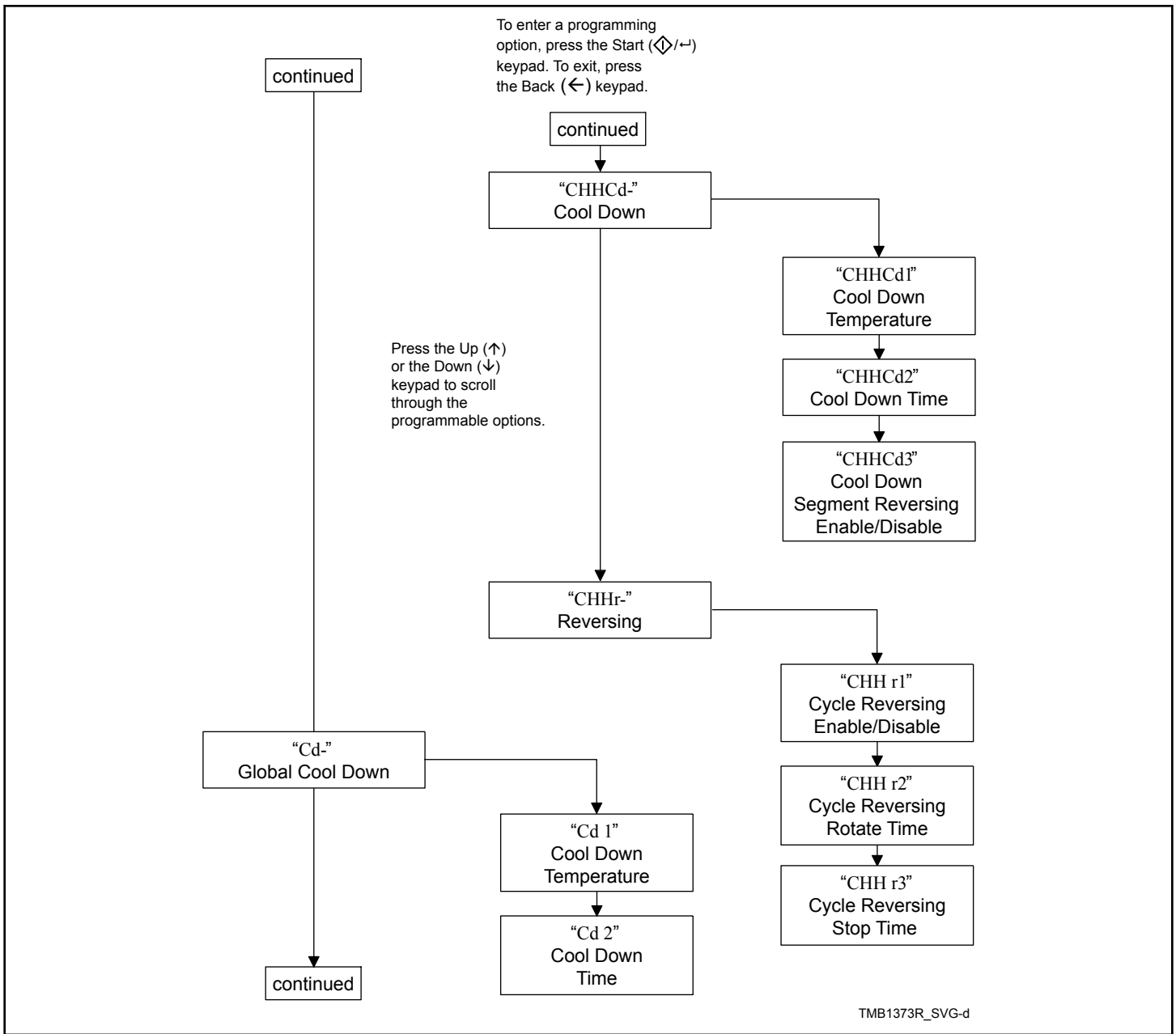


Figure 10

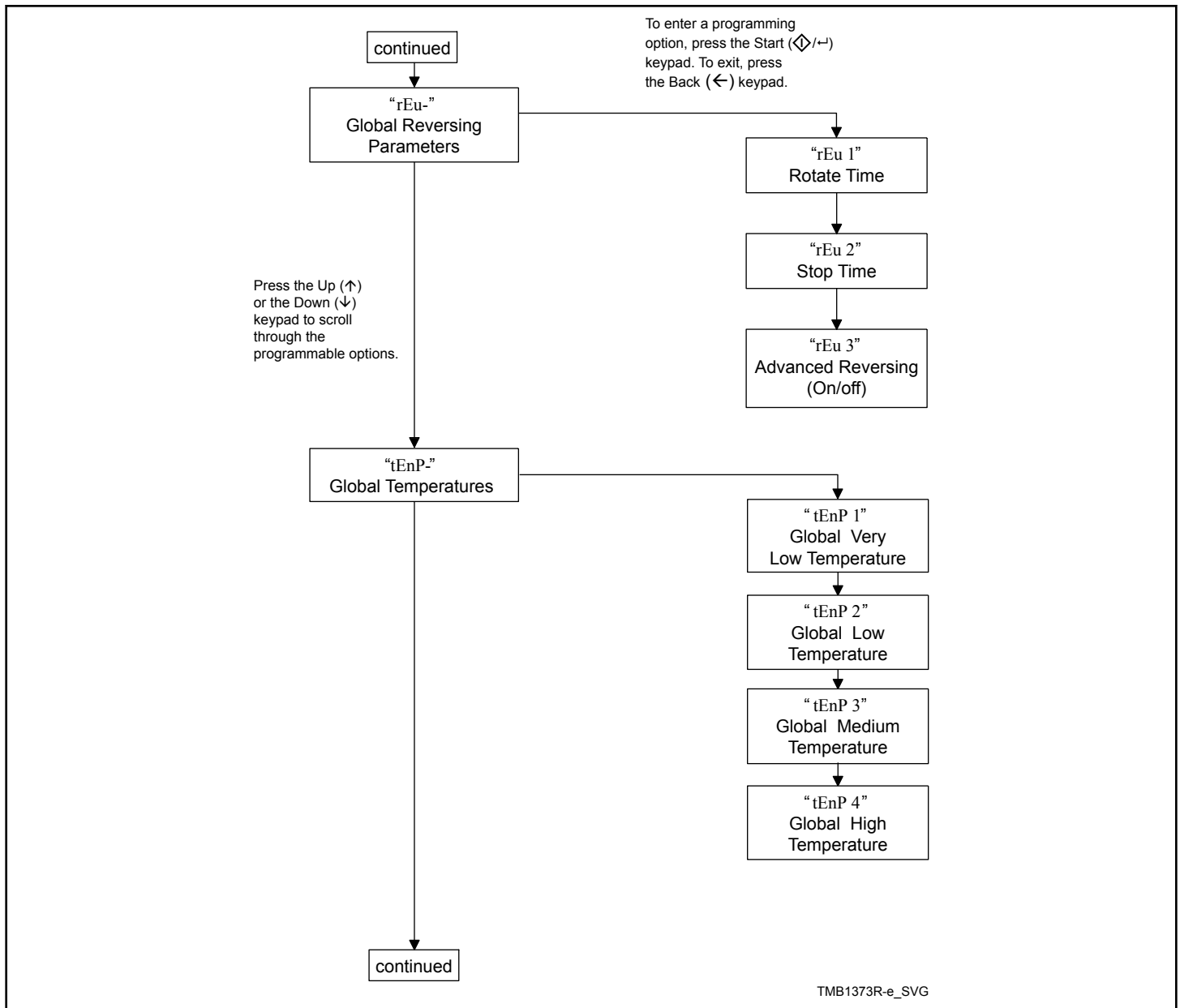


Figure 11

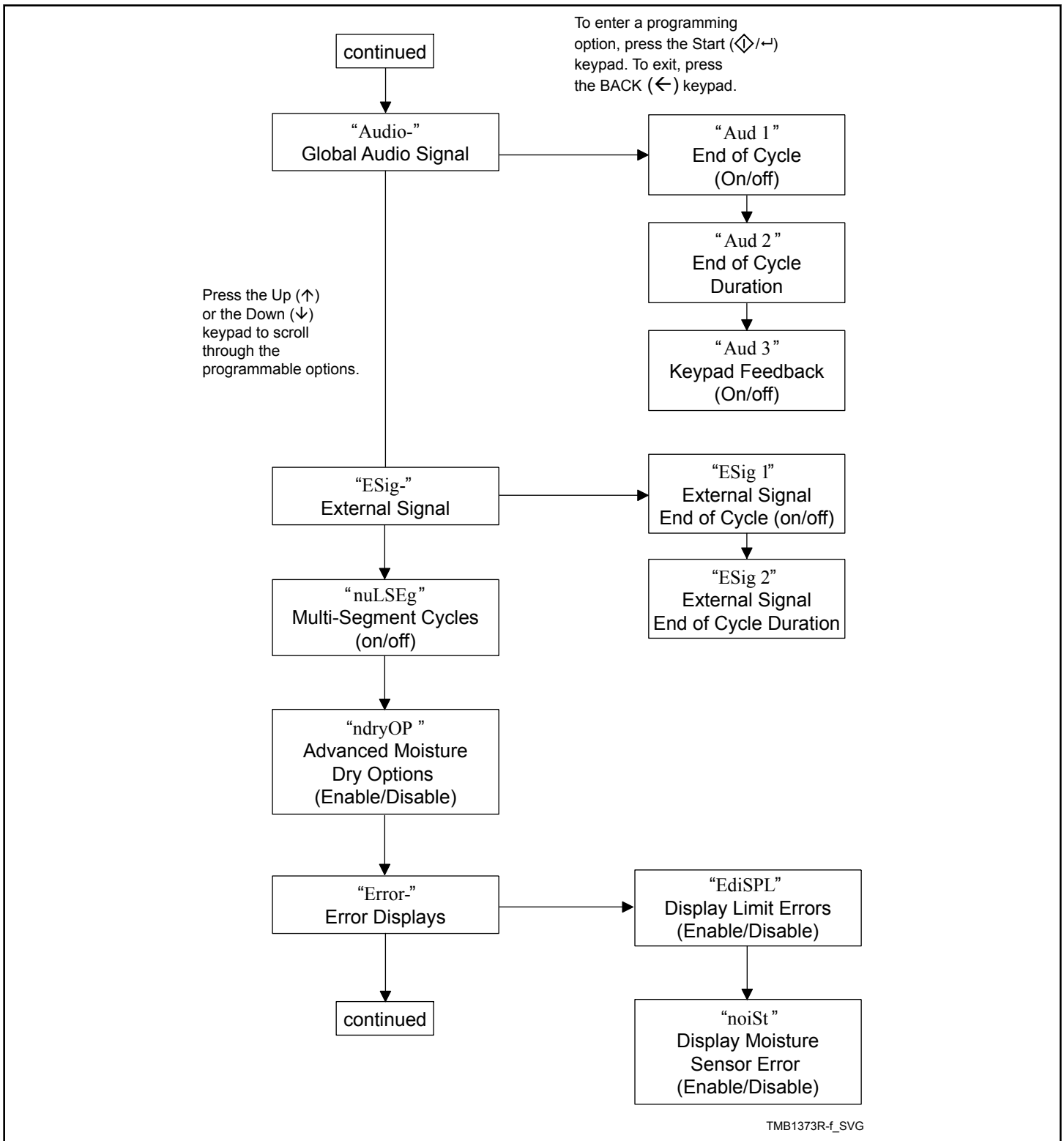


Figure 12

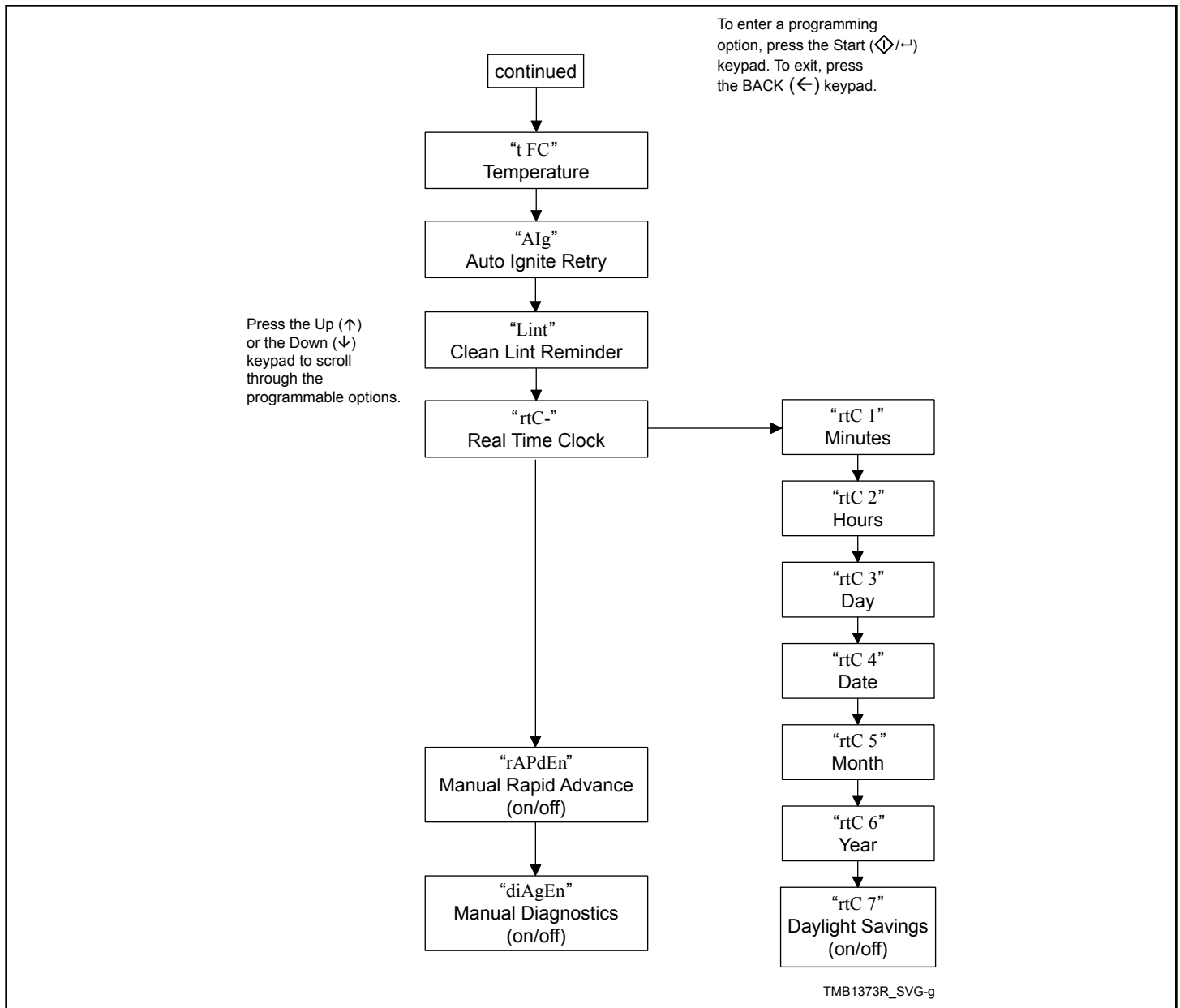


Figure 13

Collecting Audit Information

This feature allows the owner to retrieve audit information stored in the tumble dryer by pressing a sequence of pads on the control. For an explanation of the audit options available, refer to *Table 5*.

How to Enter Audit Feature

1. Control must be in Manual Mode to start. Refer to *How to Enter the Manual Mode*.
2. Press the Up or the Down keypad until Audit appears.
3. Press the Start keypad. CyCLE will appear.

If the procedure did not work, the control will return to the Idle Mode.

How to Read Audit Data

1. Use the Up or the Down keypad to scroll through various options until the desired option is shown in the display. Refer to *Table 5* for an explanation of the audit options available.

Audit Options List	
Display	Description
CyCLE	Total # of machine cycles
totHrS	Total # of run hours
HEAtHr	Total # of heat hours
rA CyC	Total # of rapid advance cycles
Ab CyC	Total # of aborted cycles
AntiCt	Total # of times anti-wrinkle exceeded
End2OP	Average time from end of cycle to door open (last 25 cycles)
End25t	Average time from end of cycle to run mode (last 25 cycles)

Table 5

2. Once the desired option appears in the display, press the Start keypad **once** to start the audit count.
3. Press the Start keypad again. The control will go to the next audit option in the Audit Options List.
4. To select other audit options, repeat steps 1 – 3.

How to Exit Audit Feature

Press the Back keypad until the control returns to Idle Mode.

Manual Reset

This feature allows the owner to reset the tumble dryer control's programming data to the factory default settings by pressing a sequence of pads on the control. For an explanation of the Factory Default Settings, refer to **Default Tumble Dryer Settings**.

1. Control must be in Manual Mode to start. Refer to *How to Enter the Manual Mode*.
2. Press the Up or the Down keypad until rESet appears.
3. Press the Start keypad. The control will be blank until the programming is complete. Once the program has been reset, the control will revert back to the Manual Mode, displaying diAg.

Custom Save

This feature allows the owner to save a current cycle. For time dry cycles, the custom save will reprogram the cycle time to the time that has elapsed in the current cycle. For moisture dry cycles, the custom save feature will save the current moisture level as the target moisture level for the current cycle.

1. While a cycle is running, press the Back and Start keypads.
2. Display will change to SAUE and Start keypad will flash.
3. Press the Start keypad.

Testing Machine and Electronic Control Functions

This feature allows the owner to run diagnostic tests on various tumble dryer operations without servicing the tumble dryer. The tests that are available are shown in *Table 6*.

For an overview of the manual diagnostic test feature, refer to the flowchart.

- Press the Up or the Down keypad to scroll through the diagnostic test options.

How to Start Tests

To start a diagnostic test, refer to the quick reference chart below (*Table 6*). Press the Start keypad when the desired test is displayed. For detailed information on each test, read the appropriate description.

How to Exit Testing Feature

Press the Back keypad. The display will return to Idle Mode.

How to Enter Testing Feature

- Enter Manual Mode. Refer to *How to Enter the Manual Mode*.
- Press the Up or the Down keypad until diAg appears.
- Press the Start keypad. Display will change to dSoft indicating the control software version number test.

Diagnostic (Testing) Mode – Quick Reference Chart	
Test Number	Diagnostic Mode
dSoft	Control Software Version
ddoor	Loading Door Status
dLint	Lint Door Status
dHEAt	Heater Interlock Test
FConHH	Fan Motor Contactor Status (HH represents input status, open OP or closed CL)
FnCSHH	Fan Motor Centrifugal Switch Status (HH represents input status, open OP or closed CL)
CAb HH	Cabinet High Limit Thermostat Status (HH represents input status, open OP or closed CL)
SL HH	Stove High Limit Thermostat 1 Status (HH represents input status, open OP or closed CL)
SL2 HH	Stove High Limit Thermostat 2 Status (HH represents input status, open OP or closed CL)
ddiP	DIP Switch Status
diCnAL	ICM Alarm Status
diCnrS	ICM Reset Test
dEALrn	External Alarm Test
ddryon	Dryer On Temperature Test
dtHEr	Thermistor Temperature Test
dConF2	Machine Config #2 Display
dConF3	Machine Config #3 Display

Diagnostic (Testing) Mode – Quick Reference Chart	
dAFS	Airflow Switch Test
dFAn	Fan Motor Test
ddAnPr	Damper Motor Test*
drEuSE	Reverse Motor Test*
drotAt	Rotation Sensor Test*
drnC 1	Moisture Sensor Test (Shorted test jumper)* (orange jumper)
drnC 2	Moisture Sensor Test (Resistance test jumper)* (black jumper)
* = Test only shown if enabled by the DIP switch configuration.	

Table 6

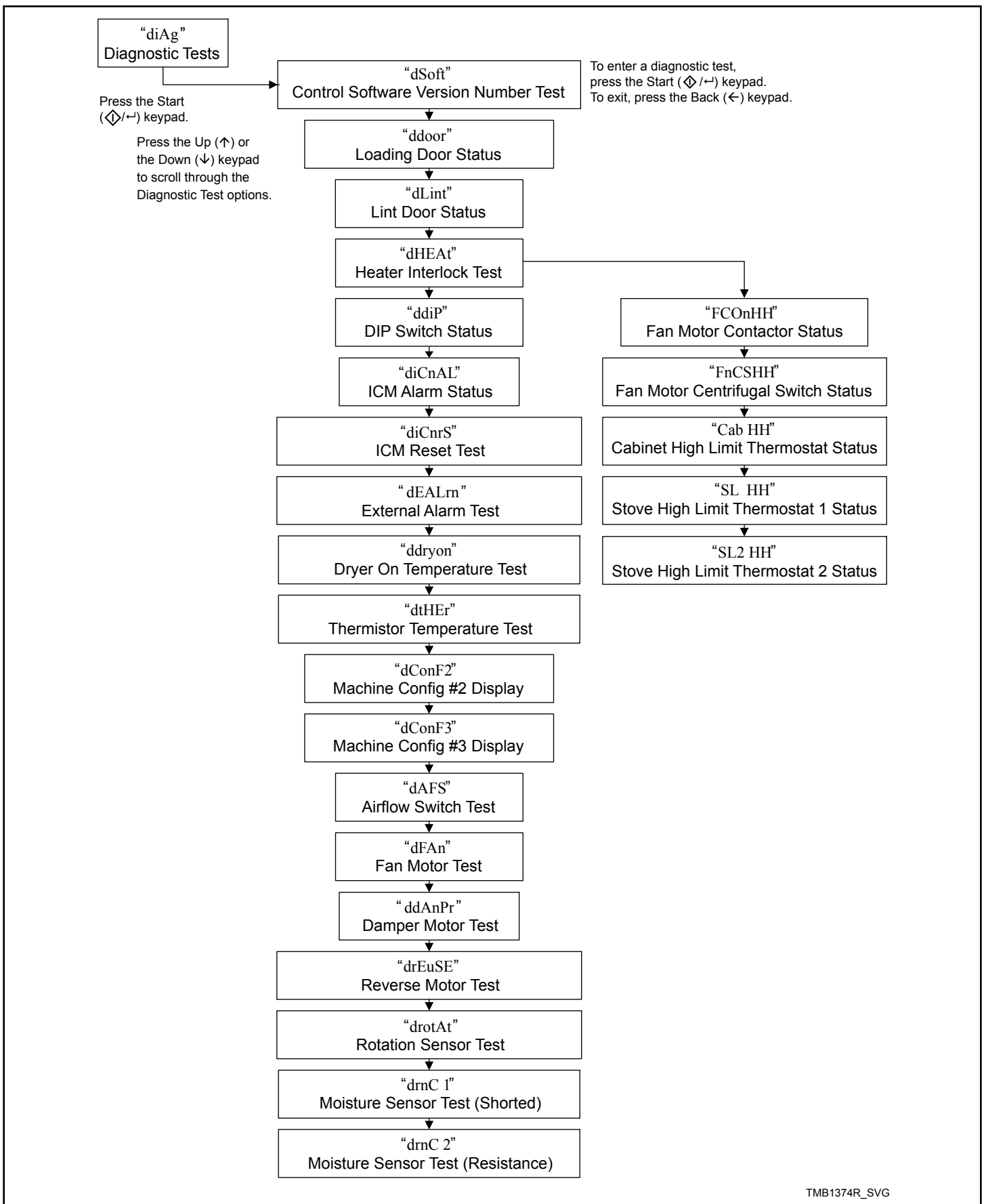


Figure 14

Diagnostic Test Descriptions

Control Software Version Number Test

This option displays the control software version number. To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show S HH where HH is the software version number.

To exit the Software Version Number Test, press the Back keypad. The control will return to the testing mode.

Loading Door Test

This option tests the loading door switch. To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show doorOP when the loading door switch is open and doorCL when the loading door switch is closed.

The loading door switch has to be closed or open for at least one second for the control to register the switch as closed or open.

To exit the Loading Door Test, press the Back keypad. The control will return to the testing mode.

Lint Door Test

This option tests the lint door switch. To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show LintOP when the lint door switch is open and LintCL when the lint door switch is closed.

The lint door switch has to be closed or open for at least one second for the control to register the switch as closed or open.

NOTE: Loading door must be closed while testing lint door.

To exit the Lint Door Test, press the Back keypad. The control will return to the testing mode.

Heater Interlock Test

While this test is running, the control will show the status of the following inputs for two seconds each. The control will continue scrolling through the input status displays until the test is aborted.

To start test, the control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press Start. Refer to five sections below for more details on individual statuses.

NOTE: These switches are tested in sequence. If one switch is sensed open, the rest will be open as well. For example, if the fan motor contactor switch is open, all of the switches will be open.

To exit the test, press the Back keypad. The control will return to the testing mode.

Fan Motor Contactor Switch

The display will show FCOOnOP if the switch is sensed open and FCOOnCL if the switch is sensed closed.

Fan Motor Centrifugal Switch

The display will show FnCSOP if the switch is sensed open and FnCSCL if the switch is sensed closed.

Cabinet High Limit Thermostat

The display will show CAb OP if sensed open for at least 1.5 seconds and CAb CL if sensed closed for at least one second.

Stove High Limit Thermostat 1

The display will show SL OP if sensed open for at least 1.5 seconds and SL CL if sensed closed for at least one second.

Stove High Limit Thermostat 2

The display will show SL2 OP if sensed open for at least 1.5 seconds and SL2 CL if sensed closed for at least one second.

Dip Switch Status

The control will show the displays in *Table 7* according to the DIP switch configuration. The control will show which switches are in the ON position.

DS8	DS7	DS6	DS5	DS4	DS3	DS2	DS1	Display
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	dSC000
OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	dSC001
OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	dSC002
OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	dSC004

DS8	DS7	DS6	DS5	DS4	DS3	DS2	DS1	Display
OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	dSC008
OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	dSC016
OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	dSC032
OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	dSC064
ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	dSC128

Table 7

ICM Alarm Status

This option shows the status of the ICM (Ignition Control Module) Alarm.

To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show iAL on if the alarm is active for at least one second or iALOFF if the alarm is not active for one second.

To exit the test, press the Back keypad. The control will return to the testing mode.

ICM Reset Test

The ICM Reset Test can be used to both activate the ICM alarm signal and reset the ICM alarm. When this test is started, the ICM reset will become active. If the reset signal is active for a long enough period of time (4 seconds) the ICM Lockout input will become active. To reset the ICM, stop the ICM Reset Test and then start the test again until the ICM Lockout input becomes inactive (4 seconds) and then stop the ICM Reset Test. If irESeT shows on the display, ICM Reset output is active.

External Alarm Test

This option tests whether the external alarm is working.

To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show EALArn and the external alarm will sound until the test is exited.

To exit this test, press the Back keypad. The control will return to the testing mode.

Tumble Dryer On Temperature Test

This option tests the temperature inside the cylinder while running a cycle.

To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show P HHHF (Fahrenheit) or P HHHC (Celsius). Use the Up or the Down keypad to select desired temperature. Press the Start keypad to begin cycle. While the test is running the control will display the temperature estimated in the cylinder (HHH F or HHH C). Once the cylinder temperature stabilizes at the target temperature, the heater is turned off and there is a two minute cool down period. During cool down, the control will display the time remaining as nn SS.

NOTE: This test does not increment the Total # of Cycles audit counter.

To exit the test, press the Back keypad. The control will return to the testing mode.

Thermistor Temperature Test

This option displays the temperature sensed at the thermistor in 5°F [3°C] increments.

To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show HHHF or HHHC. The F will show Fahrenheit, the C will show Celsius and the HHH will show degrees. If control senses a shorted thermistor, the display will show SH . If the control senses an open thermistor, the display will show OP .

To exit this test, press the Back keypad. The control will return to the testing mode.

Machine Configuration Display #2 Test

This option shows the machine configuration values for the machine type.

To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Startkeypad. The display will show C HHH, with HHH the number corresponding to the machine capacity. Refer to *Table 8*.

Value	Description
2	25, 30 Pound Tumble Dryer
4	30, 45 Pound Stack Tumble Dryer
5	35 and 55 Pound Tumble Dryer
12	50, 75, F75, 120, 170 and 200 Pound Tumble Dryer

Table 8

To exit Machine Configuration Display #2 Test, press the Back keypad. The control will return to the testing mode.

Machine Configuration Display #3 Test

This option shows the machine configuration values for the machine capacity.

To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show d HHH, with HHH representing the machine capacity. Refer to *Table 9*.

To exit Machine Configuration Display #3 Test, press the Back keypad. The control will return to the testing mode.

Value	Description
0	Tumble Dryer
17	25 Pound Tumble Dryer
18	30 Pound Tumble Dryer
19	30 Pound Stack Tumble Dryer
20	30 Pound Stack Tumble Dryer – Lower Pocket
21	30 Pound Stack Tumble Dryer – Upper Pocket
22	35 Pound Tumble Dryer
23	45 Pound Stack Tumble Dryer
24	45 Pound Stack Tumble Dryer – Lower Pocket
25	45 Pound Stack Tumble Dryer – Upper Pocket

Value	Description
26	50 Pound Tumble Dryer
27	55 Pound Tumble Dryer
28	75, F75 Pound Tumble Dryer
29	120 Pound Tumble Dryer
30	170 Pound Tumble Dryer
31	200 Pound Tumble Dryer

Table 9

Airflow Switch Test

This option shows the current state of the airflow switch.

To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show AF OP or AF CL, with AF OP being open and AF CL being closed.

Switch has to be closed for at least one second or open for at least one second for a valid change.

To exit Airflow Switch Test, press the Back keypad. The control will return to the testing mode.

Fan Motor Test

This option shows the fan motor running.

To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show FAn to indicate the fan motor is going to run.

The test must run for at least six seconds before it can be exited and off for six seconds before the test can be run again.

NOTE: This test does not count towards the total machine run time operation.

To exit Fan Motor Test, press the Back keypad. The control will return to the testing mode.

Damper Motor Test

This option shows the damper motor running.

To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show dAnPer to indicate the damper motor is going to run.

The test must run for at least six seconds before it can be exited and off for six seconds before the test can be run again.

NOTE: This test does not count towards the total machine run time operation.

To exit Damper Motor Test, press the Back keypad. The control will return to the testing mode.

Reverse Motor Test

This option shows the reverse motor running.

To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show rmotor to indicate the reverse motor is going to run.

The test must run for at least six seconds before it can be exited and off for six seconds before the test can be run again.

NOTE: This test does not count towards the total machine run time operation

To exit Reverse Motor Test, press the Back keypad. The control will return to the testing mode.

Rotation Sensor Test

This option shows the RPM of the tumble dryer cylinder.

To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the Start keypad. The display will show rPnHHH. The display is updated every ten seconds. The test must run for at least six seconds before it can be exited and off for six seconds before the test can be run again.

NOTE: This test does not count towards the total machine run time operation.

To exit Rotation Sensor Test, press the Back keypad. The control will return to the testing mode.

Moisture Sensor Test (Shorted Test Jumper)

This step is skipped if the control is not configured for Moisture Sensing. When entering this test, the control will show rnC 1 while flashing the Start LED one second on/one second off, allowing the user to short the cylinder to the baffle (orange jumper). When the Start key is pressed, this test step energizes the Fan Motor Contactor and Forward Motor Contactor and the control will show HH. The moisture sensor test is 30 seconds. During this 30 second period, the control is continually monitoring the moisture sensor input for the expected short circuit. If an intermittent signal or high resistance is sensed before the 30 seconds expire, the test is terminated and the control will show OPEN , indicating that the test has failed. At this time the user has the option to press the Back keypad to return and run the test again. If the control ran the whole test reading the expected moisture sensor level and without an intermittent signal or high resistance, PASS will be shown. If either the loading or lint doors are opened during the test, the control will reset the test step and al-

low it to be run again. When the test is complete and result is displayed, the control sounds a 5 second audio signal. Press a key to advance to the next test step. If the Up or Down keypad is pressed while the test is in progress the control will toggle between displays HH, rnC HH and SnrHHH. If the display is left on rnC HH or SnrHHH for 5 seconds the control will revert to showing rnC 1.

Moisture Sensor Test (Resistance Test Jumper)

This step is skipped if the control is not configured for Moisture Sensing. When entering this test, the control will show rnC 2 while flashing the Start key LED one second on/one second off, allowing the user to place the 510k Ohm resistor between the cylinder and the baffle (black jumper) which simulates an expected moisture sensor level. When the Start keypad is pressed, this step energizes the Fan Motor Contactor and Forward Motor Contactor and the control will show HH. The moisture sensor test is 30 seconds. During this 30 second period, the control is continually monitoring the moisture sensor input for the expected moisture sensor level. If an intermittent signal or unexpected resistance is sensed before the time expires, the test is terminated and the control will show OPEN , indicating that the test has failed. At this time, the user has the option to press the Back keypad to return and run the test again. If the control ran the test reading the expected moisture sensor level and without an intermittent signal or unexpected resistance, PASS will be shown. If either the loading or lint doors are opened during the test, the control will reset the test step and allow it to be run again. When the test is complete and result is displayed, the control sounds a 5 second audio signal. Press a key to advance to the next test step. If the Up or Down keypad is pressed while the test is in progress the control will toggle between HH, rnC HH and SnrHHH. If the display is left on rnC HH or SnrHHH for 5 seconds the control will revert to showing rnC 2.

Production Test Cycle

To Enter Production Test Cycle

1. Be certain control is in Idle Mode.
2. While pressing and holding the Down keypad with one hand, press the Back keypad with the other hand.
3. When the control enters the Production Test Cycle, it will first display S HH with the HH showing the software version of the control.
4. The control will advance through the sequence of test steps whenever any keypad is pressed, with the exception of the Keypad Test. Refer to *Table 10* for all tests in the Production Test Cycle.

To Exit Production Test Cycle

The test will be exited when the time reaches 00 on the control in the 10 Minute Test Cycle. Otherwise, the control must be powered down to end the test.

Production Test Cycle Quick Reference Table		
Display	Test Mode	Comments
S HH	Software Version	HH is the software version number.
Ct HHH	Control Type	2, 3, 4, 5 or 6, depending on brand.
PAd	Keypad Test	When a key is pressed, the control will display the number assigned to the keypad. As each keypad is pressed, the control will display the number assigned to it in the last digit of the display until the next key is pressed (example, if Key 1 is pressed the control will show PAd 1). When all keypads have been pressed, the control will advance to next step after a one second delay.
doorOP or doorCL	Loading Door Test	The control will display the status of the loading door: doorOP if door is open or doorCL if door is closed.
LintOP or LintCL	Lint Door Test	The control will display the status of the lint door: LintOP if door is open or LintCL if door is closed. Loading door must be closed.
All LEDs and display segments will light	Show Entire Display Mode	The audio signal is turned off. Control will stay in this mode until any key is pressed.
C HH	Machine Configuration #2 Display	HH is the configuration byte value. The control will remain in this mode until any key is pressed.
-	DIP Switch Configuration	The control will show the sum of all switches in the On position. The control will remain in this mode until any key is pressed.
Degrees in 5°F [3°C] increments, SH, oP	Thermistor Temperature Test	The temperature will be displayed in either Fahrenheit or Celsius, depending on machine's configuration (refer to <i>Programming Control</i>). If control senses a shorted thermistor, SH will be displayed. If control senses an open thermistor, OP will be displayed.
-	Moisture Sensor 1 Test (Shorted)	Refer to <i>Diagnostic Test Descriptions</i> . Test step lasts for 15 seconds.
-	Moisture Sensor 2 Test (Resistance)	Refer to <i>Diagnostic Test Descriptions</i> . Test step lasts for 15 seconds.
nn SS	10 Minute Test Cycle	Determines if tumble dryer can function in a cycle for 10 minutes. Start pad will flash one second on and one second off. The Start pad can be used to decrease time remaining. If Start pad is not pressed within 4.25 minutes, the control will return to Idle Mode.

Table 10

NOTE: If power to the control is turned off before 10 Minute Test Cycle has ended, the cycle will be cleared from control.

Machine Errors

PDA Communications Error

These errors may occur during communications. When an error occurs, the display indicates the error message on the control for a few seconds. When a PDA communication error occurs, the audit counter Total Bad IR Communications is incremented, the hour, date, and year of the event are saved, and the error code is saved. An active machine cycle is not affected when there is an error during PDA communications.

Open Thermistor Error

Any time the control senses a temperature less than 0°F [-18°C] after the first three minutes of an active cycle, the control will go to Cool Down, display this error message, and then turn on the audio signal. The control will continue to display the error message until any of the keypads are pressed, the Cool Down portion of the cycle has ended, and the temperature reading is greater than 0°F [-18°C]. Press any keypad to stop audio signal. Once all three occur, the control will return to the Idle Mode.

Shorted Thermistor Error

Any time the control senses a temperature greater than 210 + 4°F [99°C + 16°C] during an active cycle, the control will enter the Cool Down portion of the cycle, display this error message, and turn on the audio signal. The control will continue to display the error message until any of the keypads are pressed, the Cool Down portion of the cycle has ended, and the temperature reading is less than 210°F [99°C]. Press any keypad to stop audio signal. Once all three occur, the control will return to the Idle Mode.

Stove and Cabinet Limit Errors

There are up to two Stove Limit thermostats and one Cabinet Limit thermostat on the machine. While the heat relay is on, if the stove temperature or cabinet temperature reaches the high temperature for the particular limit thermostat, the heater will turn off automatically and the control will continue the cycle with no heat until the limit thermostat resets. Once the control reaches the End of Cycle the control will display the appropriate error message, if programmed to do so, and sound the audio signal. The control will continue displaying the error message until the control returns to Idle mode.

NOTE: On some models the stove and cabinet limit thermostats need to be manually reset. The remainder of the cycle will be run with no heat. On these models, the thermostat(s) must be reset prior to cycling power or the control will return back to Error Mode.

Auto Ignition Retry (Gas Models Only)

If the Ignition Control Module (ICM) fails to ignite the gas valve the ICM will send an ICM Lockout Alarm to the control. When the control receives the ICM Lockout Alarm it will increment the ICM Lockout Alarm audit counter.

If the ICM needs to be manually reset, when the control receives the ICM Lockout Alarm it will display the Cycle Stopped Menu with text prompting the user to press the Start keypad to reset the ICM. The user can continue to reset the ICM until there are no more programmable retry attempts (factory default is 3) or the gas ignites. On machines equipped with an ICM that does not need to be manually reset, when the control receives the ICM Lockout Alarm it will turn the heat relay off for twenty (20) seconds and then turn it back on to try and ignite the gas. The control will continue to try and ignite the gas until there are no more programmable retry attempts (factory default is 3) or the gas ignites. If the ICM fails to ignite the gas on the last attempt the control will start the Cool Down portion of the cycle, display the heat error message and sound the audio signal. When the Cool Down portion of the cycle ends the control will continue to display the error message until power is cycled to the machine or a user presses the Back keypad.

Air Flow Switch Errors

The control will flag an Airflow Switch Error under several conditions. Airflow Switch Errors will be processed differently depending upon what state the machine was in when the error was detected.

Airflow Switch Sensed Closed While Not In Run Mode

If an airflow switch is sensed closed 30 seconds after entering Idle Mode, Pause Mode or End of Cycle Mode, the control will display an error message until power is cycled or the error clears. The cycle will not start and all user inputs will be ignored. If the error does clear, the control will go back to its previous mode of operation.

Airflow Switch Does Not Close After Cycle Started

If the airflow switch does not close within 5 seconds of the start/re-start of a cycle, the control will go to the Cool Down portion of the cycle, display an error message and sound the audio alarm. Once the Cool Down portion of the cycle ends, the control will continue to display the error message until the power is cycled to the machine or the Back keypad is pressed.

Airflow Switch Bounces During A Running Cycle

If the airflow switch is open for at least one second, the heat will be turned off and will remain off until the switch is observed

closed for at least 5 seconds (it is flagged as an airflow switch bounce). If there are 5 airflow switch bounces within 5 minutes the control will go to the Cool Down portion of the cycle, display an error message and sound the audio signal. When the Cool Down portion of the cycle ends, the control will continue displaying the error message until power is cycled or a user presses the Back keypad.

Rotation Sensor Error

If the machine is equipped with a rotation sensor, the control will constantly monitor the input and calculate the cylinder's rpm. If the rpm drops to zero while the cylinder is supposed to be spinning, the control will go to the Cool Down portion of the cycle. The control will display an error message and sound the audio signal. Once the Cool Down portion ends, the control will continue to display the error message until power is cycled to the machine.

Fan Motor Contactor Error

If the control attempts to turn on the heater relay and the control does not sense that the Fan Motor Contactor is closed, the control will go to the Cool Down portion of the cycle, display an error message and turn on the audio signal. Once the Cool Down portion of the cycle ends, the control will continue displaying the error message until power is cycled or the Back keypad is pressed.

Fan Motor Centrifugal Switch Error

If the control attempts to turn on the fan motor and the fan motor contactor is sensed closed but the Fan Motor Centrifugal Switch fails to close, the control will go into the Cool Down portion of the cycle, display an error message and turn on the audio signal. Once the Cool Down portion of the cycle ends, the control will continue displaying the error message until power is cycled or the Back keypad is pressed.

DIP Switch/Harness Index Mismatch Error

On power up the control reads the Temperature Index Harness value and compares that with the value of switch 1, switch 2 and switch 3 on the DIP switch configuration. If the result is an invalid setup the control will not enter Idle mode and instead enter Error Mode. The control will ignore all user inputs and display an error message. The machine must be powered down and the correct temperature index harness must be installed and/or the DIP switch configuration must be corrected.

Moisture Sensor Error

When in Idle Mode, the control will begin to monitor the moisture sensor input. If the moisture sensor circuitry detects a load present signal read consistently (every second) for a ten minute

period without user input, the control will declare a load sensed. If at any time during this sensing period, user input is detected or the control determines that there is no load present, it resets the load detected counter. After this ten minute period with a consistent load sensed, the control queues the "is dryer empty" (display iS, drYEr, EnPtY each for two seconds) prompting the user to answer whether the machine is currently empty, pressing the Up or Down keypads will toggle between yes and no. If the operator selects "no" (display no), the control returns to the Idle Mode display. If the operator selects "yes" (display YES) the control will increment the Moisture Sensor Error counter and record the error in the queue of the last eight machine errors and display the Moisture Sensor Error (display EnoiSt), pressing the Back keypad will clear the error. The "is dryer empty" prompt will only appear once a day unless machine power is cycled.

Error Codes

Following is a list of possible error codes for an electronic control. Errors beginning with EI refer to external device Infra-red communication errors. All other errors refer to machine errors.

Dis-play	Description	Cause/Corrective Action
EI01	Transmission Failure	Communication failure. Re-aim external device and try again.
EI02	Device Time-out	Communication failure. Re-aim external device and try again.
EI03	Invalid Command Code	Incorrect machine type. Before downloading, ensure data is for current machine type.
EI05	Invalid or Out-of-Range Data	Incorrect machine type. Before downloading, ensure data is for current machine type and values entered are within the minimum and maximum limits.
EI09	CRC-16 Error	Communication failure. Re-aim external device and try again.
EI0A	Framing Error	Communication error. Re-aim external device and try again.
EI0C	Time-out Exceeded	Communication error. Re-aim external device and try again.
EI0E	Encryption Error	Incorrect machine type. Before downloading, ensure data is for current machine type.
EI0F	Invalid Wake-up or Infra-red Disabled	Communication failure or infra-red is disabled. Manually enable infra-red on control or re-aim external device and try again.
ESH	Shorted Thermistor Error	Remove any lint build-up around thermistor. Inspect wires to the thermistor. If problem persists, replace thermistor.
EoP	Open Thermistor Error	Remove any lint build-up around thermistor. Inspect wires to the thermistor. If problem persists, replace thermistor.
E AF1	Airflow Switch Error (Switch Fails to Open At End of Cycle)	Inspect lint screen and ductwork. Once error is cleared, control will go back to previous mode of operation.
E AF2	Airflow Switch Error (Switch Does Not Close After Cycle Starts)	Inspect lint screen and ductwork. Cycle power to machine (power down, then power up) or push Back keypad.
E AF	Airflow Switch Error (Switch Bounces During Cycle)	Inspect lint screen and ductwork. Cycle power to machine (power down, then power up) or push Back keypad.
E HEAt	Machine Did Not Reach Expected Temperature.	The ignition control has power, but a flame was not sensed after the programmed amount of retries. Be sure that gas is turned on. If problem persists, troubleshoot the ignition circuit. (Igniter, Cable, Ignition Control Module.)
E SL	Stove Limit 1 Error	Inspect tumble dryers venting/ventwork to ensure that the ventwork is adequate and that there are no blockages. Be sure to clean and inspect lint screen. Remove any lint build-up around the thermostat. If problem persists, replace thermostat.
E SL2	Stove Limit 2 Error	Inspect tumble dryers venting/ventwork to ensure that the ventwork is adequate and that there are no blockages. Be sure to clean and inspect lint screen. Remove any lint build-up around the thermostat. If problem persists, replace thermostat.
E CAb	Cabinet Limit Error	Remove any lint build-up around thermostat. If problem persists, replace control or thermostat.
E iCn	ICM Lockout Alarm Active	Check that the gas is turned on and that the ignition circuit functions. Also check that the gas valve is operational.

Display	Description	Cause/Corrective Action
E rot	Rotation Sensor Error	Check for broken or worn belts. Make sure machine is not over loaded and check if rotation sensor is working. If problem persists, replace rotation sensor or control.
ESEtUP	DIP Switch Configuration Size Mismatch Error	Check temperature index harness and dipswitch settings. If problem persists, replace temperature index harness or control.
E FCO n	Fan Motor Contactor Error	Inspect wires to the fan motor contactor. Check signal to the output control. If problem persists, replace fan motor contactor.
E FnCS	Fan Motor Centrifugal Switch Error	Clean vents on the fan motor. Inspect wires to the fan motor centrifugal switch. If problem persists, replace fan motor.
EnoiSt	Moisture Sensor Error	Push Back keypad to clear the error.

Table 11

Communication Mode

This mode is entered whenever the control is communicating with a PDA. Refer to **PC and PDA Application User Instructions**.

Infra-red Communications

The Infra-red Communications feature allows the control to communicate with an external device. The control can be programmed and have its data read without using the keypad. It may also be used to start and stop various diagnostic tests.

How to Begin Communications with An External Device

The control will go blank and the display will show -C- until the communication is complete. The display will return to the previous mode. If an error occurs that terminates communication, the display will show the appropriate error code.

NOTE: The Infra-red Communications option must be turned on.

Cycle Charts

Cycle No.	Cycle Name	Cycle Type	Material Type	Reversing	Temperature	Target Moisture or Time
1	Towels	Moisture Dry	Cotton	OFF	190°F [88°C]	1%
2	Sheets Blend	Moisture Dry	Bedding	ON	160°F [71°C]	5%
3	Sheets Cotton	Moisture Dry	Bedding	ON	190°F [88°C]	5%
4	Sheets Blend Iron	Moisture Dry	Bedding	ON	160°F [71°C]	20%
5	Sheets Cotton Iron	Moisture Dry	Bedding	ON	190°F [88°C]	20%
6	Duvet Cotton	Moisture Dry	Bedding	ON	190°F [88°C]	5%
7	Duvet Blend	Moisture Dry	Bedding	ON	160°F [71°C]	5%
8	Napkins Synthetic	Moisture Dry	Synthetic	OFF	140°F [60°C]	3%
9	Napkins Blend	Moisture Dry	Blend	OFF	160°F [71°C]	3%
10	Napkins Synthetic Iron	Moisture Dry	Synthetic	OFF	140°F [60°C]	20%
11	Napkins Blend Iron	Moisture Dry	Blend	OFF	160°F [71°C]	20%
12	Napkins Cotton Iron	Moisture Dry	Cotton	OFF	190°F [88°C]	20%
13	Uniform Perm Press	Moisture Dry	Synthetic	OFF	140°F [60°C]	5%
14	Uniform Cotton	Moisture Dry	Cotton	OFF	190°F [88°C]	5%
15	30 Minute High	Time Dry	n/a	OFF	190°F [88°C]	30 minutes
16	30 Minute Med	Time Dry	n/a	OFF	160°F [71°C]	30 minutes
17	30 Minute Low	Time Dry	n/a	OFF	140°F [60°C]	30 minutes
18	30 Minute No Heat	Time Dry	n/a	OFF	n/a	30 minutes
19	15 Minute High	Time Dry	n/a	OFF	190°F [88°C]	15 minutes
20	15 Minute Med	Time Dry	n/a	OFF	160°F [71°C]	15 minutes
21	15 Minute Low	Time Dry	n/a	OFF	140°F [60°C]	15 minutes
22	15 Minute No Heat	Time Dry	n/a	OFF	n/a	15 minutes
23	10 Minute High	Time Dry	n/a	OFF	190°F [88°C]	10 minutes
24	10 Minute Med	Time Dry	n/a	OFF	160°F [71°C]	10 minutes
25	10 Minute Low	Time Dry	n/a	OFF	140°F [60°C]	10 minutes
26	10 Minute No Heat	Time Dry	n/a	OFF	n/a	10 minutes

Cycle Charts

27	5 Minute High	Time Dry	n/a	OFF	190°F [88°C]	5 minutes
28	5 Minute Med	Time Dry	n/a	OFF	160°F [71°C]	5 minutes
29	5 Minute Low	Time Dry	n/a	OFF	140°F [60°C]	5 minutes
30	5 Minute No Heat	Time Dry	n/a	OFF	n/a	5 minutes

n/a = not applicable

- All cycles include a 2 minute, 100°F [38°C] cool down.
- All cycles with reversing on rotate for 30 seconds and pause for 6 seconds.
- Cool down and reversing settings can be changed from what is pre-programmed from the factory.
- If machine does not have the moisture sensing option, the moisture sensing cycles in the table above are automatically changed to Auto-Dry cycle type with Dryness Level 0 (zero).